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RESEARCH MEMORANDUM

WIND-TUNNEL INVESTIGATION OF THE EFFECT OF ASPECT RATIO
AND CHORDWISE LOCATION ON EFFECTIVENESS OF
SPOILER-SLOT-DEFLECTOR CONTROLS ON THIN
UNTAPERED WINGS AT TRANSONIC SPEEDS

By Alexander D. Hammond and Jarrett K. Huffman

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

RESEARCH MEMORANDUMWIND-TUNNEL INVESTIGATION OF THE EFFECT OF ASPECT RATIO
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UNTAPERED WINGS AT TRANSONIC SPEEDS

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SUMMARY

A wind-tunnel investigation has been made in the Langley high-speed 7- by 10-foot tunnel by use of the transonic-bump technique to study the effectiveness of spoiler-slot-deflector controls on four unswept untapered wings. The wings had NACA 65A004 airfoil sections. Full-span spoiler-slot-deflectors, projected to 7.5 percent wing chord along the 30-, 50-, 70-, and 90-percent-wing-chord lines, were tested on wings of aspect ratio 1 to 4 at Mach numbers from 0.60 to 1.10. The data are presented without discussion.

INTRODUCTION

The design of spoiler-slot-deflector controls at transonic speeds is hampered by the lack of a satisfactory theoretical approach and the lack of systematic data on the effects of wing aspect ratio and the chordwise location of the control. The effect of these variables on the lateral control characteristics of plain spoiler-type lateral controls is reported in reference 1. There are a number of published investigations of the lateral control characteristics of spoiler-slot-deflector configurations (for example, see refs. 2 to 6) and the data of these investigations have shown certain advantages of the spoiler-slot-deflector combination over the plain spoiler, such as the good control effectiveness at high angles of attack of the spoiler-slot-deflector control.

The present paper presents the results of a wind-tunnel investigation to determine the control effectiveness on four small-scale rectangular semispan wings equipped with spoiler-slot-deflector controls at transonic speeds. The variables investigated were wing aspect ratio (aspect ratios from 1 to 4), control chordwise location (control located from 0.30 to

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0.90 wing chord) and ratio of deflector projection to spoiler projection (projection ratios of 0.50, 0.75, and 1.00). The transonic speeds were obtained by using the transonic-bump technique in the Langley high-speed 7- by 10-foot wind tunnel.

In order to expedite the publication of the results of this investigation, no discussion of the data is presented. All of the data are presented in tabular form and, in addition, some data showing significant trends are presented in graphic form.

COEFFICIENTS AND SYMBOLS

The data are presented about the model wind axes with the origin on the wing root chord line of a longitudinal position corresponding to the quarter-chord of the mean aerodynamic chord.

c_L lift coefficient, $\frac{\text{Twice semispan lift}}{qS}$

c_D drag coefficient, $\frac{\text{Twice semispan drag}}{qS}$

c_m pitching-moment coefficient about 0.25c,
 $\frac{\text{Twice semispan pitching moment}}{qSc}$

c_l rolling-moment coefficient, $\frac{\text{Semispan rolling moment}}{qSb}$

c_n yawing-moment coefficient, $\frac{\text{Semispan yawing moment}}{qSb}$

b wing span, ft

c wing chord, ft

x_s distance of spoiler trailing edge (in the unprojected position) from the wing leading edge, ft

S wing area, sq ft

A wing aspect ratio, b^2/S

q	free-stream dynamic pressure, $\frac{1}{2} \rho V^2$, lb/sq ft
V	free-stream velocity, ft/sec
ρ	free-stream density, slugs/cu ft
R	Reynolds number based on wing chord
M	free-stream Mach number
M_l	local Mach number
α	angle of attack, deg
δ_s	spoiler projection measured from wing surface (negative when projected above surface of wing), fraction of wing chord
δ_d	deflector projection measured from wing surface (negative when projected below surface of wing), fraction of wing chord
δ_d/δ_s	deflector projection to spoiler projection ratio
ΔC_L , ΔC_m , ΔC_D	change in coefficient due to control deflection, difference between wing with control and plain wing
$(\Delta C_N)_{cp}$	location of longitudinal center of pressure of incremental normal-force coefficient due to control projection

MODELS

The geometric characteristics of the models used in the investigation are given in figure 1. The models were machined from solid steel to an NACA 65A004 airfoil section. The basic models had no twist or camber and had a taper ratio of 1. The aspect ratio was varied by cutting the wings at the appropriate spanwise station normal to the chord plane.

The flap-type spoiler and deflector controls (fig. 1) extended from the wing root to the wing tip and had a chord of 10 percent of the wing chord. The various locations of the trailing edge of the slot of the spoiler-slot-deflector controls were at the 30-, 50-, 70-, and 90-percent-chordwise stations on the wings. The steel spoiler was hinged to the upper wing surface at the leading edge of the slot. The steel deflector was hinged to the lower wing surface at the trailing edge of the slot. The spoiler projection (δ_s) was 0.075c for all the wings and the deflector

projection was varied to give ratios of deflector projection to spoiler projection of 0.50, 0.75, or 1.00.

TESTS

The tests were made by using the transonic-bump technique in the Langley high-speed 7- by 10-foot tunnel. The models were attached to a five-component electrical strain-gage balance beneath the bump surface. The tests were made over a Mach number range from 0.60 to 1.10 at Reynolds numbers varying from approximately 1.0×10^6 at $M = 0.60$ to approximately 1.3×10^6 at $M = 1.10$. The variation of the local Mach number over the bump in the vicinity of the model location for several Mach numbers is shown in figure 2.

The test angles of attack varied generally from -30° to 20° whenever the loads encountered did not exceed the design limit of the balance. The aspect ratio of the models was varied from 1 to 4.

CORRECTIONS

The data have not been corrected for jet-boundary effects or blocking since the models were sufficiently small with respect to tunnel boundaries as to make the corrections negligible. The roll and yaw data presented represent the rolling- and yawing-moment coefficients resulting from deflections of the control on one wing. Since no reflection-plane corrections have been applied to the data, they represent symmetrically deflected controls and should be reduced if applied to antisymmetric deflection. The magnitude of the corrections (reflection plane) at $M = 0$ obtained from references 7 and 8 are given in figure 3. The variation of the reflection-plane correction with Mach number has not been established in the transonic speed range but does decrease to 0 at supersonic speeds.

RESULTS

The force and moment data obtained in this investigation are presented in tables I to IV. A graphical presentation of some of the data is shown in figures 4 to 7 to give a pictorial description of the typical variation of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ with the several test parameters. The variation of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ resulting from projection of the spoiler-slot-deflector control at various chordwise positions is

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plotted against aspect ratio in figure 4 against angle of attack in figure 5, and against Mach number in figure 6 for a ratio of deflector projection to spoiler projection (δ_d/δ_s) of 0.75. The variations of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ with angle of attack for the spoiler-slot-deflector configurations located at the 70-percent-chordwise position on the aspect-ratio-4 model are presented in figure 7 for control projection ratios (δ_d/δ_s) of 0.50, 0.75, and 1.00 at several Mach numbers.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., June 18, 1957.

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.1188	.0043	-0.0224	.0206	.0048	-3	-0.0990	.0150	-0.0222	.0120	.0070
-2	-0.0763	.0043	-0.0189	.0155	.0048	-2	-0.0841	.0150	-0.0121	.0060	.0084
-1	-0.0424	.0086	-0.0036	.0103	.0024	-1	-0.0495	.0150	-0.0083	.0000	.0070
0	-0.0424	.0086	-0.0013	.0052	.0000	0	-0.0049	.0150	-0.0057	-0.0030	.0056
1	-0.0169	.0129	-0.0220	.0000	.0024	1	.0149	.0150	.0017	-0.0060	.0070
2	.0085	.0215	-0.0047	-0.0052	.0024	2	.0495	.0175	.0082	-0.0090	.0070
3	.0509	.0215	-0.0083	-0.0103	.0024	3	.0891	.0226	.0163	-0.0151	.0084
5	.1272	.0387	.0007	-0.0155	.0048	5	.1732	.0326	.0199	-0.0241	.0098
7	.1951	.0430	.0049	-0.0258	.0072	7	.2474	.0526	.0201	-0.0331	.0126
10	.3138	.0816	.0117	-0.0413	.0120	10	.3959	.0952	.0077	-0.0542	.0182
20	.8057	.3607	-0.0873	-0.1083	.0505	20	.9106	.3783	-0.0829	-0.1234	.0561
$M = 0.80$											
-3	-0.0936	.0030	-0.0257	.0071	.0050	-3	-0.0950	.0264	-0.0158	.0087	.0054
-2	-0.0585	.0030	-0.0181	.0036	.0050	-2	-0.0665	.0240	-0.0071	.0058	.0040
-1	-0.0293	.0059	-0.0156	.0000	.0033	-1	-0.0237	.0192	-0.0020	.0000	.0040
0	-0.0058	.0030	-0.0165	-0.0036	.0033	0	.0000	.0216	.0000	-0.0029	.0040
1	.0058	.0118	-0.0064	-0.0036	.0033	1	.0427	.0264	.0051	-0.0087	.0013
2	.0527	.0148	-0.0051	-0.0107	.0033	2	.0807	.0264	.0128	-0.0116	.0040
3	.0702	.0178	.0036	-0.0142	.0050	3	.1187	.0313	.0138	-0.0173	.0054
5	.1521	.0296	.0057	-0.0249	.0050	5	.2042	.0505	.0131	-0.0289	.0081
7	.2340	.0444	.0109	-0.0356	.0083	7	.3086	.0721	.0049	-0.0404	.0108
10	.3686	.0889	.0117	-0.0534	.0166	10	.4510	.1226	-0.0074	-0.0606	.0175
20	.8484	.3555	-0.1004	-0.1103	.0514	20	.9733	.4110	-0.0991	-0.1299	.0579
$M = 0.85$											
-3	-0.1095	.0083	-0.0247	.0067	.0047	-3	-0.0997	.0275	-0.0127	.0083	.0013
-2	-0.0657	.0056	-0.0188	.0033	.0047	-2	-0.0680	.0275	-0.0069	.0055	.0013
-1	-0.0383	.0083	-0.0134	-0.0033	.0047	-1	-0.0227	.0252	-0.0043	.0000	.0013
0	-0.0109	.0083	-0.0080	-0.0067	.0047	0	.0136	.0298	-0.0034	-0.0055	.0000
1	.0164	.0111	-0.0056	-0.0133	.0047	1	.0453	.0298	.0051	-0.0110	.0000
2	.0493	.0139	-0.0017	-0.0167	.0047	2	.0907	.0367	.0087	-0.0138	.0000
3	.0822	.0167	.0053	-0.0200	.0047	3	.1315	.0413	.0085	-0.0193	.0013
5	.1643	.0277	.0121	-0.0266	.0062	5	.2040	.0551	.0114	-0.0276	.0039
7	.2464	.0416	.0142	-0.0366	.0109	7	.2992	.0803	.0020	-0.0414	.0077
10	.3834	.0832	.0092	-0.0566	.0171	10	.4442	.1285	-0.0148	-0.0579	.0141
20	.8489	.3521	-0.0993	-0.1166	.0513	20	.9519	.4085	-0.1000	-0.1268	.0553
$M = 0.90$											
-3	-0.1291	.0131	-0.0182	.0063	.0044	-3	-0.1034	.0327	-0.0112	.0079	.0012
-2	-0.0775	.0131	-0.0195	.0000	.0015	-2	-0.0603	.0284	-0.0064	.0052	.0000
-1	-0.0516	.0078	-0.0088	-0.0031	.0015	-1	-0.0215	.0284	-0.0029	-0.0026	.0000
0	-0.0207	.0105	-0.0020	-0.0094	.0000	0	.0129	.0284	.0016	-0.0052	.0000
1	.0155	.0131	-0.0040	-0.0126	.0015	1	.0517	.0349	.0038	-0.0079	.0012
2	.0516	.0131	.0014	-0.0157	.0015	2	.0862	.0349	.0059	-0.0131	.0012
3	.0775	.0209	.0093	-0.0188	.0029	3	.1292	.0393	.0094	-0.0183	.0012
5	.1549	.0288	.0186	-0.0314	.0044	5	.2068	.0567	.0075	-0.0288	.0024
7	.2479	.0471	.0165	-0.0408	.0088	7	.2929	.0763	.0009	-0.0393	.0073
10	.3873	.0915	.0089	-0.0597	.0132	10	.4394	.1221	-0.0147	-0.0603	.0134
20	.8469	.3555	-0.0922	-0.1193	.0483	20	.9261	.3991	-0.1023	-0.1231	.0513
$M = 1.00$											
-3	-0.0950	.0264	-0.0158	.0087	.0054	-3	-0.0950	.0264	-0.0158	.0087	.0054
-2	-0.0665	.0240	-0.0071	.0058	.0040	-2	-0.0665	.0240	-0.0071	.0058	.0040
-1	-0.0237	.0192	-0.0020	.0000	.0040	-1	-0.0237	.0192	-0.0020	.0000	.0040
0	.0000	.0216	.0000	-0.0029	.0040	0	.0000	.0216	.0000	-0.0029	.0040
1	.0427	.0264	.0051	-0.0087	.0013	1	.0427	.0264	.0051	-0.0087	.0013
2	.0807	.0264	.0128	-0.0116	.0040	2	.0807	.0264	.0128	-0.0116	.0040
3	.1187	.0313	.0138	-0.0173	.0054	3	.1187	.0313	.0138	-0.0173	.0054
5	.2042	.0505	.0131	-0.0289	.0081	5	.2042	.0505	.0131	-0.0289	.0081
7	.3086	.0721	.0049	-0.0404	.0108	7	.3086	.0721	.0049	-0.0404	.0108
10	.4510	.1226	-0.0074	-0.0606	.0175	10	.4510	.1226	-0.0074	-0.0606	.0175
20	.9733	.4110	-0.0991	-0.1299	.0579	20	.9733	.4110	-0.0991	-0.1299	.0579
$M = 1.05$											
-3	-0.0997	.0275	-0.0127	.0083	.0013	-3	-0.0997	.0275	-0.0127	.0083	.0013
-2	-0.0680	.0275	-0.0069	.0055	.0013	-2	-0.0680	.0275	-0.0069	.0055	.0013
-1	-0.0227	.0252	-0.0043	.0000	.0013	-1	-0.0227	.0252	-0.0043	.0000	.0013
0	.0136	.0298	-0.0034	-0.0055	.0000	0	.0136	.0298	-0.0034	-0.0055	.0000
1	.0453	.0298	.0051	-0.0110	.0000	1	.0453	.0298	.0051	-0.0110	.0000
2	.0907	.0367	.0087	-0.0138	.0000	2	.0907	.0367	.0087	-0.0138	.0000
3	.1315	.0413	.0085	-0.0193	.0013	3	.1315	.0413	.0085	-0.0193	.0013
5	.2040	.0551	.0114	-0.0276	.0039	5	.2040	.0551	.0114	-0.0276	.0039
7	.2992	.0803	.0020	-0.0414	.0077	7	.2992	.0803	.0020	-0.0414	.0077
10	.4442	.1285	-0.0148	-0.0579	.0141	10	.4442	.1285	-0.0148	-0.0579	.0141
20	.9519	.4085	-0.1000	-0.1268	.0553	20	.9519	.4085	-0.1000	-0.1268	.0553
$M = 1.10$											
-3	-0.1034	.0327	-0.0112	.0079	.0012	-3	-0.1034	.0327	-0.0112	.0079	.0012
-2	-0.0603	.0284	-0.0064	.0052	.0000	-2	-0.0603	.0284	-0.0064	.0052	.0000
-1	-0.0215	.0284	-0.0029	-0.0026	.0000	-1	-0.0215	.0284	-0.0029	-0.0026	.0000
0	.0129	.0284	.0016	-0.0052	.0000	0	.0129	.0284	.0016	-0.0052	.0000
1	.0517	.0349	.0038	-0.0079	.0012	1	.0517	.0349	.0038	-0.0079	.0012
2	.0862	.0349	.0059	-0.0131	.0012	2	.0862	.0349	.0059	-0.0131	.0012
3	.1292	.0393	.0094	-0.0183	.0012	3	.1292	.0393	.0094	-0.0183	.0012
5	.2068	.0567	.0075	-0.0288	.0024	5	.2068	.0567	.0075	-0.0288	.0024
7	.2929	.0763	.0009	-0.0393	.0073	7	.2929	.0763	.0009	-0.0393	.0073
10	.4394	.1221	-0.0147	-0.0603	.0134	10	.4394	.1221	-0.0147	-0.0603	.0134
20	.9261	.3991	-0.1023	-0.1231	.0513	20	.9261	.3991	-0.1023	-0.1231	.0513

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(b) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$											
-3	-0.2797	0.1674	-0.0453	0.0374	0.0313	-3	-0.3268	0.2382	-0.0517	0.0399	0.0351
-2	-0.2585	0.1674	-0.0453	0.0348	0.0300	-2	-0.3070	0.2319	-0.0432	0.0369	0.0337
-1	-0.2288	0.1738	-0.0392	0.0309	0.0276	-1	-0.2847	0.2344	-0.0400	0.0339	0.0316
0	-0.1992	0.1695	-0.0486	0.0271	0.0252	0	-0.2699	0.2382	-0.0385	0.0309	0.0302
1	-0.1865	0.1824	-0.0668	0.0245	0.0264	1	-0.2451	0.2344	-0.0477	0.0279	0.0288
2	-0.1441	0.1867	-0.0687	0.0193	0.0240	2	-0.2129	0.2319	-0.0485	0.0233	0.0281
3	-0.1229	0.1974	-0.0620	0.0155	0.0252	3	-0.1832	0.2319	-0.0529	0.0196	0.0274
5	-0.0636	0.2124	-0.0599	0.0064	0.0264	5	-0.1213	0.2344	-0.0538	0.0105	0.0267
7	-0.0127	0.2253	-0.0641	-0.0039	0.0252	7	-0.0421	0.2319	-0.0618	0.0008	0.0260
10	0.0763	0.2446	-0.0638	-0.0193	0.0276	10	0.0767	0.2407	-0.0632	-0.0181	0.0274
20	0.4280	0.3841	-0.0634	-0.0670	0.0529	20	0.5720	0.3824	-0.1145	-0.0776	0.0548
$M = 0.80$											
-3	-0.3332	0.1998	-0.0466	0.0418	0.0348	-3	-0.2352	0.2442	-0.0770	0.0275	0.0337
-2	-0.3186	0.1983	-0.0511	0.0391	0.0332	-2	-0.2043	0.2406	-0.0692	0.0224	0.0323
-1	-0.2981	0.1998	-0.0382	0.0364	0.0307	-1	-0.1758	0.2430	-0.0640	0.0181	0.0303
0	-0.2601	0.1998	-0.0429	0.0329	0.0290	0	-0.1402	0.2466	-0.0652	0.0130	0.0290
1	-0.2484	0.2072	-0.0483	0.0293	0.0282	1	-0.1045	0.2466	-0.0773	0.0079	0.0243
2	-0.2163	0.2027	-0.0614	0.0258	0.0274	2	-0.0808	0.2466	-0.0777	0.0036	0.0256
3	-0.1783	0.2057	-0.0538	0.0213	0.0282	3	-0.0570	0.2466	-0.0814	0.0000	0.0270
5	-0.1140	0.2116	-0.0457	0.0124	0.0282	5	0.0024	0.2490	-0.0731	-0.0065	0.0276
7	-0.0497	0.2131	-0.0588	0.0036	0.0274	7	0.0618	0.2502	-0.0834	-0.0159	0.0283
10	0.0555	0.2249	-0.0586	-0.0124	0.0274	10	0.1805	0.2610	-0.0803	-0.0325	0.0310
20	0.4501	0.3507	-0.0752	-0.0631	0.0489	20	0.6438	0.4113	-0.1392	-0.0896	0.0593
$M = 0.85$											
-3	-0.3393	0.2120	-0.0457	0.0441	0.0349	-3	-0.2143	0.2274	-0.0755	0.0243	0.0091
-2	-0.3311	0.2106	-0.0494	0.0416	0.0326	-2	-0.1756	0.2309	-0.0670	0.0194	0.0129
-1	-0.3065	0.2092	-0.0404	0.0391	0.0310	-1	-0.1414	0.2309	-0.0683	0.0139	0.0084
0	-0.2846	0.2106	-0.0352	0.0350	0.0295	0	-0.1072	0.2332	-0.0682	0.0090	-0.0019
1	-0.2682	0.2106	-0.0479	0.0308	0.0287	1	-0.0889	0.2309	-0.0834	0.0035	-0.0129
2	-0.2244	0.2106	-0.0483	0.0275	0.0279	2	-0.0547	0.2367	-0.0853	-0.0007	-0.0013
3	-0.1888	0.2106	-0.0430	0.0225	0.0279	3	-0.0319	0.2425	-0.0870	-0.0118	-0.0013
5	-0.1286	0.2134	-0.0453	0.0133	0.0272	5	0.0365	0.2482	-0.0885	-0.0166	-0.0032
7	-0.0575	0.2134	-0.0580	0.0042	0.0264	7	0.1163	0.2540	-0.0857	-0.0250	0.0103
10	0.0520	0.2217	-0.0599	-0.0133	0.0272	10	0.2257	0.2690	-0.0954	-0.0416	0.0129
20	0.4761	0.3533	-0.0808	-0.0657	0.0505	20	0.6795	0.4387	-0.1550	-0.0978	0.0472
$M = 0.90$											
-3	-0.3385	0.2185	-0.0470	0.0432	0.0344	-3	-0.2134	0.1932	-0.0696	0.0223	-0.0147
-2	-0.3281	0.2158	-0.0491	0.0401	0.0330	-2	-0.1724	0.1964	-0.0673	0.0177	-0.0153
-1	-0.3075	0.2158	-0.0407	0.0377	0.0308	-1	-0.1315	0.1986	-0.0614	0.0118	-0.0196
0	-0.2894	0.2198	-0.0353	0.0338	0.0293	0	-0.1056	0.2019	-0.0616	0.0072	-0.0220
1	-0.2687	0.2224	-0.0451	0.0306	0.0286	1	-0.1056	0.2019	-0.0878	0.0026	-0.0226
2	-0.2300	0.2132	-0.0535	0.0275	0.0278	2	-0.0409	0.2128	-0.0689	-0.0033	-0.0220
3	-0.2015	0.2158	-0.0493	0.0228	0.0278	3	-0.0259	0.2150	-0.0723	-0.0085	-0.0196
5	-0.1395	0.2224	-0.0453	0.0141	0.0271	5	0.0453	0.2292	-0.0844	-0.0190	-0.0183
7	-0.0698	0.2198	-0.0537	0.0039	0.0257	7	0.1315	0.2346	-0.0777	-0.0301	-0.0147
10	0.0491	0.2250	-0.0573	-0.0134	0.0271	10	0.2328	0.2510	-0.0851	-0.0446	-0.0079
20	0.5012	0.3624	-0.0952	-0.0699	0.0506	20	0.6487	0.4365	-0.1433	-0.1003	0.0293
$M = 1.00$											
$M = 1.05$											
-3	-0.2143	0.2274	-0.0755	0.0243	0.0091	-3	-0.2143	0.2274	-0.0755	0.0243	0.0091
-2	-0.1756	0.2309	-0.0670	0.0194	0.0129	-2	-0.1756	0.2309	-0.0670	0.0194	0.0129
-1	-0.1414	0.2309	-0.0683	0.0139	0.0084	-1	-0.1414	0.2309	-0.0683	0.0139	0.0084
0	-0.1072	0.2332	-0.0682	0.0090	-0.0019	0	-0.1072	0.2332	-0.0682	0.0090	-0.0019
1	-0.0889	0.2309	-0.0834	0.0035	-0.0129	1	-0.0889	0.2309	-0.0834	0.0035	-0.0129
2	-0.0547	0.2367	-0.0853	-0.0007	-0.0013	2	-0.0547	0.2367	-0.0853	-0.0007	-0.0013
3	-0.0319	0.2425	-0.0870	-0.0118	-0.0013	3	-0.0319	0.2425	-0.0870	-0.0118	-0.0013
5	0.0365	0.2482	-0.0885	-0.0166	-0.0032	5	0.0365	0.2482	-0.0885	-0.0166	-0.0032
7	0.1163	0.2540	-0.0857	-0.0250	0.0103	7	0.1163	0.2540	-0.0857	-0.0250	0.0103
10	0.2257	0.2690	-0.0954	-0.0416	0.0129	10	0.2257	0.2690	-0.0954	-0.0416	0.0129
20	0.6795	0.4387	-0.1550	-0.0978	0.0472	20	0.6795	0.4387	-0.1550	-0.0978	0.0472
$M = 1.10$											
-3	-0.2134	0.1932	-0.0696	0.0223	-0.0147	-3	-0.2134	0.1932	-0.0696	0.0223	-0.0147
-2	-0.1724	0.1964	-0.0673	0.0177	-0.0153	-2	-0.1724	0.1964	-0.0673	0.0177	-0.0153
-1	-0.1315	0.1986	-0.0614	0.0118	-0.0196	-1	-0.1315	0.1986	-0.0614	0.0118	-0.0196
0	-0.1056	0.2019	-0.0616	0.0072	-0.0220	0	-0.1056	0.2019	-0.0616	0.0072	-0.0220
1	-0.1056	0.2019	-0.0878	0.0026	-0.0226	1	-0.1056	0.2019	-0.0878	0.0026	-0.0226
2	-0.0409	0.2128	-0.0689	-0.0033	-0.0220	2	-0.0409	0.2128	-0.0689	-0.0033	-0.0220
3	-0.0259	0.2150	-0.0723	-0.0085	-0.0196	3	-0.0259	0.2150	-0.0723	-0.0085	-0.0196
5	0.0453	0.2292	-0.0844	-0.0190	-0.0183	5	0.0453	0.2292	-0.0844	-0.0190	-0.0183
7	0.1315	0.2346	-0.0777	-0.0301	-0.0147	7	0.1315	0.2346	-0.0777	-0.0301	-0.0147
10	0.2328	0.2510	-0.0851	-0.0446	-0.0079	10	0.2328	0.2510	-0.0851	-0.0446	-0.0079
20	0.6487	0.4365	-0.1433	-0.1003	0.0293	20	0.6487	0.4365	-0.1433	-0.1003	0.0293

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(c) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-3	-0.4371	0.1934	-0.0130	0.0477	0.0193
-2	-0.4158	0.1934	-0.0071	0.0439	0.0168
-1	-0.3819	0.1805	-0.0046	0.0413	0.0156
0	-0.3565	0.1719	-0.0189	0.0387	0.0156
1	-0.3565	0.1934	-0.0161	0.0348	0.0156
2	-0.3182	0.1719	-0.0110	0.0323	0.0144
3	-0.2928	0.1934	-0.0065	0.0271	0.0144
5	-0.2291	0.1934	-0.0064	0.0181	0.0144
7	-0.1273	0.1934	-0.0099	0.0077	0.0156
10	-0.0170	0.2019	-0.0105	-0.0103	0.0156
20	0.3607	0.3523	-0.0353	-0.0606	0.0349
$M = 0.80$					
-3	-0.4596	0.2134	-0.0070	0.0525	0.0191
-2	-0.4538	0.2105	-0.0022	0.0507	0.0183
-1	-0.4245	0.2075	-0.0087	0.0481	0.0158
0	-0.4099	0.2075	-0.0124	0.0445	0.0149
1	-0.3835	0.2075	-0.0066	0.0401	0.0149
2	-0.3542	0.2016	-0.0114	0.0374	0.0141
3	-0.3132	0.1986	-0.0142	0.0312	0.0133
5	-0.2400	0.1927	-0.0187	0.0214	0.0125
7	-0.1464	0.1838	-0.0102	0.0107	0.0133
10	-0.0029	0.1867	-0.0090	-0.0080	0.0149
20	0.3952	0.3231	-0.0410	-0.0596	0.0340
$M = 0.85$					
-3	-0.4658	0.2192	0.0004	0.0517	0.0583
-2	-0.4521	0.2220	0.0076	0.0492	0.0567
-1	-0.4357	0.2081	0.0178	0.0467	0.0171
0	-0.4138	0.2081	0.0154	0.0433	0.0163
1	-0.3836	0.2025	0.0107	0.0392	0.0155
2	-0.3562	0.1942	0.0206	0.0358	0.0140
3	-0.3151	0.1942	0.0172	0.0308	0.0140
5	-0.2384	0.1859	0.0185	0.0208	0.0140
7	-0.1507	0.1803	0.0219	0.0100	0.0140
10	0.0000	0.1803	0.0190	-0.0083	0.0148
20	0.4110	0.3191	-0.0434	-0.0608	0.0350
$M = 0.90$					
-3	-0.4530	0.2228	-0.0020	0.0496	0.0191
-2	-0.4401	0.2228	0.0105	0.0472	0.0176
-1	-0.4194	0.2176	0.0130	0.0449	0.0169
0	-0.4039	0.2123	0.0156	0.0417	0.0154
1	-0.3754	0.2097	0.0205	0.0394	0.0154
2	-0.3417	0.2045	0.0184	0.0346	0.0147
3	-0.3107	0.1966	0.0185	0.0299	0.0140
5	-0.2252	0.1887	0.0267	0.0197	0.0132
7	-0.1450	0.1835	0.0195	0.0094	0.0132
10	0.0000	0.1835	0.0202	-0.0094	0.0147
20	0.4401	0.3277	-0.0481	-0.0630	0.0360

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-3	-0.4263	0.2309	-0.0119	0.0452	0.0197
-2	-0.4089	0.2259	0.0002	0.0415	0.0176
-1	-0.3891	0.2234	0.0026	0.0399	0.0162
0	-0.3668	0.2208	0.0030	0.0362	0.0155
1	-0.3420	0.2158	0.0083	0.0332	0.0155
2	-0.3024	0.2133	0.0078	0.0279	0.0148
3	-0.2602	0.2008	0.0056	0.0241	0.0141
5	-0.1983	0.2008	0.0207	0.0151	0.0141
7	-0.1115	0.1982	0.0182	0.0053	0.0141
10	0.0124	0.1958	0.0161	-0.0121	0.0148
20	0.4734	0.3338	-0.0593	-0.0678	0.0387
$M = 1.00$					
-3	-0.3211	0.2433	-0.0563	0.0289	0.0189
-2	-0.2854	0.2408	-0.0497	0.0246	0.0169
-1	-0.2736	0.2408	-0.0436	0.0224	0.0162
0	-0.2260	0.2408	-0.0426	0.0166	0.0155
1	-0.2117	0.2360	-0.0379	0.0145	0.0155
2	-0.1713	0.2288	-0.0410	0.0087	0.0155
3	-0.1308	0.2288	-0.0435	0.0036	0.0155
5	-0.0595	0.2288	-0.0368	-0.0051	0.0148
7	0.0119	0.2240	-0.0331	-0.0145	0.0155
10	0.1071	0.2240	-0.0181	-0.0253	0.0189
20	0.5471	0.3854	-0.0817	-0.0781	0.0452
$M = 1.05$					
-3	-0.2902	0.2296	-0.0627	0.0241	0.0161
-2	-0.2585	0.2296	-0.0539	0.0200	0.0148
-1	-0.2267	0.2227	-0.0552	0.0165	0.0141
0	-0.1972	0.2227	-0.0490	0.0117	0.0129
1	-0.1700	0.2250	-0.0524	0.0083	0.0129
2	-0.1338	0.2227	-0.0509	0.0034	0.0122
3	-0.0907	0.2181	-0.0520	-0.0007	0.0122
5	-0.0295	0.2181	-0.0387	-0.0097	0.0129
7	0.0453	0.2181	-0.0337	-0.0193	0.0148
10	0.1587	0.2250	-0.0330	-0.0310	0.0174
20	0.6121	0.4017	-0.1083	-0.0862	0.0469
$M = 1.10$					
-3	-0.2848	0.2184	-0.0557	0.0223	0.0141
-2	-0.2546	0.2163	-0.0492	0.0184	0.0129
-1	-0.2157	0.2097	-0.0568	0.0144	0.0122
0	-0.1942	0.2075	-0.0510	0.0112	0.0116
1	-0.1597	0.2097	-0.0485	0.0066	0.0110
2	-0.1294	0.2075	-0.0437	0.0020	0.0110
3	-0.0841	0.2053	-0.0499	-0.0020	0.0110
5	-0.0216	0.2075	-0.0359	-0.0105	0.0116
7	0.0539	0.2053	-0.0348	-0.0197	0.0129
10	0.1575	0.2141	-0.0294	-0.0315	0.0159
20	0.5933	0.3932	-0.1024	-0.0840	0.0795

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

$$(d) \quad x_S/c = 0.70; \quad \delta_S = -0.075; \quad \delta_d/\delta_S = 0.50$$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.4071	0.1782	0.0683	0.0516	0.0084	-3	-0.3890	0.2007	0.0443	0.0505	0.0141
-2	-0.3816	0.1653	0.0670	0.0490	0.0072	-2	-0.3568	0.1932	0.0527	0.0467	0.0141
-1	-0.3435	0.1546	0.0724	0.0438	0.0060	-1	-0.3271	0.1882	0.0535	0.0429	0.0126
0	-0.3180	0.1395	0.0558	0.0426	0.0060	0	-0.2899	0.1857	0.0621	0.0384	0.0119
1	-0.2968	0.1782	0.0437	0.0374	0.0060	1	-0.2552	0.1781	0.0575	0.0347	0.0112
2	-0.2544	0.1782	0.0478	0.0335	0.0060	2	-0.2230	0.1756	0.0646	0.0301	0.0119
3	-0.2120	0.1804	0.0564	0.0297	0.0060	3	-0.1784	0.1731	0.0623	0.0249	0.0112
5	-0.1484	0.1825	0.0591	0.0193	0.0060	5	-0.0991	0.1756	0.0708	0.0151	0.0119
7	-0.0466	0.1847	0.0594	0.0103	0.0072	7	-0.0124	0.1756	0.0677	0.0060	0.0126
10	0.0424	0.2125	0.0575	-0.0064	0.0096	10	0.1115	0.1907	0.0716	-0.0098	0.0155
20	0.5725	0.4601	-0.0144	-0.0735	0.0373	20	0.6318	0.3889	-0.0188	-0.0791	0.0450
$M = 0.80$											
-3	-0.4389	0.1926	0.0573	0.0560	0.0116	$M = 1.00$					
-2	-0.4037	0.1837	0.0698	0.0516	0.0100	-3	-0.3115	0.2047	0.0107	0.0398	0.0142
-1	-0.3745	0.1778	0.0821	0.0472	0.0091	-2	-0.2782	0.2011	0.0194	0.0362	0.0128
0	-0.3511	0.1763	0.0690	0.0436	0.0091	-1	-0.2497	0.1926	0.0166	0.0325	0.0121
1	-0.3189	0.1733	0.0748	0.0409	0.0083	0	-0.2140	0.1902	0.0183	0.0275	0.0115
2	-0.2779	0.1674	0.0736	0.0356	0.0083	1	-0.1831	0.2468	0.0228	0.0239	0.0115
3	-0.2399	0.1644	0.0732	0.0302	0.0083	2	-0.1427	0.1842	0.0274	0.0188	0.0115
5	-0.1638	0.1629	0.0758	0.0205	0.0075	3	-0.0951	0.1830	0.0213	0.0137	0.0101
7	-0.0702	0.1644	0.0820	0.0098	0.0091	5	-0.0285	0.1842	0.0397	0.0058	0.0128
10	0.0614	0.1852	0.0710	-0.0071	0.0108	7	0.0595	0.1866	0.0374	-0.0036	0.0135
20	0.5793	0.3837	-0.0200	-0.0730	0.0390	10	0.1902	0.2131	0.0397	-0.0195	0.0182
$M = 0.85$											
-3	-0.4381	0.1941	0.0621	0.0550	0.0132	$M = 1.05$					
-2	-0.4108	0.1886	0.0766	0.0516	0.0116	-3	-0.3105	0.1928	-0.0011	0.0386	0.0116
-1	-0.3751	0.1858	0.0831	0.0475	0.0109	-2	-0.2720	0.1859	0.0011	0.0338	0.0096
0	-0.3478	0.1775	0.0717	0.0433	0.0101	-1	-0.2357	0.1825	0.0071	0.0283	0.0096
1	-0.3067	0.1761	0.0851	0.0400	0.0101	0	-0.2040	0.1779	0.0117	0.0262	0.0084
2	-0.2738	0.1636	0.0846	0.0358	0.0101	1	-0.1700	0.1756	0.0087	0.0214	0.0077
3	-0.2382	0.1664	0.0764	0.0316	0.0093	2	-0.1315	0.1744	0.0187	0.0172	0.0084
5	-0.1561	0.1622	0.0791	0.0217	0.0101	3	-0.0907	0.1721	0.0184	0.0138	0.0090
7	-0.0602	0.1650	0.0819	0.0108	0.0109	5	-0.0113	0.1767	0.0312	0.0041	0.0103
10	0.0712	0.1802	0.0781	-0.0058	0.0132	7	0.0816	0.1859	0.0267	-0.0062	0.0129
20	0.5805	0.3743	-0.0191	-0.0724	0.0388	10	0.2221	0.2146	0.0184	-0.0241	0.0167
$M = 0.90$											
-3	-0.4267	0.1964	0.0585	0.0551	0.0147	$M = 1.10$					
-2	-0.3931	0.1912	0.0710	0.0511	0.0125	-3	-0.3127	0.1802	0.0051	0.0354	0.0128
-1	-0.3621	0.1859	0.0768	0.0464	0.0117	-2	-0.2588	0.1791	-0.0001	0.0295	0.0092
0	-0.3336	0.1833	0.0798	0.0425	0.0117	-1	-0.2265	0.1747	0.0061	0.0262	0.0080
1	-0.2974	0.1768	0.0807	0.0393	0.0110	0	-0.1898	0.1692	0.0065	0.0216	0.0092
2	-0.2586	0.1715	0.0812	0.0354	0.0110	1	-0.1574	0.1671	0.0115	0.0171	0.0092
3	-0.2198	0.1663	0.0766	0.0315	0.0110	2	-0.1165	0.1660	0.0168	0.0118	0.0116
5	-0.1422	0.1663	0.0839	0.0220	0.0110	3	-0.0669	0.1638	0.0116	0.0085	0.0110
7	-0.0466	0.1663	0.0825	0.0102	0.0117	5	-0.0043	0.1671	0.0186	0.0000	0.0104
10	0.0802	0.1859	0.0807	-0.0071	0.0132	7	0.0863	0.1780	0.0215	-0.0111	0.0135
20	0.5949	0.3732	-0.0162	-0.0747	0.0418	10	0.2157	0.2075	0.0145	-0.0275	0.0165

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(e) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.95$											
-3	-0.4660	0.1780	0.0440	0.0644	0.0144	-3	-0.4482	0.2269	0.0443	0.0557	0.0155
-2	-0.4321	0.1780	0.0515	0.0618	0.0120	-2	-0.4209	0.2206	0.0572	0.0527	0.0140
-1	-0.4194	0.1780	0.0594	0.0580	0.0108	-1	-0.3838	0.2144	0.0642	0.0482	0.0119
0	-0.4024	0.1737	0.0508	0.0567	0.0096	0	-0.3590	0.2081	0.0572	0.0437	0.0119
1	-0.3813	0.1802	0.0447	0.0515	0.0108	1	-0.3293	0.2048	0.0662	0.0399	0.0119
2	-0.3559	0.1780	0.0518	0.0490	0.0108	2	-0.2847	0.2018	0.0610	0.0354	0.0112
3	-0.3389	0.1802	0.0644	0.0451	0.0108	3	-0.2476	0.1956	0.0613	0.0309	0.0112
5	-0.2627	0.1759	0.0687	0.0232	0.0108	5	-0.1733	0.1956	0.0687	0.0211	0.0119
7	-0.1906	0.1759	0.0692	0.0271	0.0108	7	-0.0867	0.1956	0.0764	0.0128	0.0119
10	-0.0847	0.1952	0.0693	0.0129	0.0132	10	-0.0371	0.2018	0.0742	-0.0023	0.0140
20	0.4024	0.3775	0.0154	-0.0490	0.0348	20	0.4952	0.3673	0.0102	-0.0617	0.0358
$M = 0.80$											
$M = 1.00$											
-3	-0.4941	0.1984	0.0589	0.0622	0.0141	-3	-0.3919	0.2261	0.0144	0.0484	0.0128
-2	-0.4619	0.1939	0.0664	0.0596	0.0133	-2	-0.3468	0.2201	0.0227	0.0433	0.0101
-1	-0.4386	0.1924	0.0720	0.0560	0.0124	-1	-0.3112	0.2177	0.0289	0.0383	0.0081
0	-0.4093	0.1939	0.0802	0.0533	0.0116	0	-0.2851	0.2117	0.0235	0.0347	0.0081
1	-0.3947	0.1939	0.0807	0.0489	0.0116	1	-0.2613	0.2081	0.0199	0.0318	0.0081
2	-0.3655	0.1821	0.0799	0.0462	0.0108	2	-0.2138	0.2057	0.0237	0.0260	0.0074
3	-0.3216	0.1791	0.0805	0.0418	0.0100	3	-0.1782	0.2057	0.0305	0.0217	0.0081
5	-0.2543	0.1762	0.0881	0.0338	0.0100	5	-0.0926	0.2057	0.0419	0.0108	0.0081
7	-0.1754	0.1717	0.0898	0.0240	0.0100	7	-0.0119	0.2057	0.0452	0.0036	0.0101
10	-0.0555	0.1806	0.0885	0.0089	0.0124	10	0.1069	0.2237	0.0524	-0.0108	0.0162
20	0.3976	0.3405	0.0231	-0.0489	0.0307	20	0.6010	0.4101	-0.0281	-0.0722	0.0404
$M = 0.85$											
$M = 1.05$											
-3	-0.4926	0.2092	0.0614	0.0624	0.0155	-3	-0.3737	0.2076	0.0092	0.0448	0.0039
-2	-0.4652	0.1981	0.0704	0.0582	0.0140	-2	-0.3375	0.2018	0.0164	0.0399	0.0032
-1	-0.4378	0.1967	0.0782	0.0558	0.0132	-1	-0.2945	0.1984	0.0162	0.0358	0.0019
0	-0.4132	0.1940	0.0788	0.0524	0.0116	0	-0.2537	0.1961	0.0241	0.0310	0.0013
1	-0.3886	0.1912	0.0833	0.0491	0.0116	1	-0.2378	0.1938	0.0117	0.0269	0.0006
2	-0.3557	0.1843	0.0858	0.0449	0.0116	2	-0.1970	0.1927	0.0171	0.0220	0.0013
3	-0.3202	0.1815	0.0875	0.0399	0.0109	3	-0.1585	0.1938	0.0232	0.0179	0.0013
5	-0.2463	0.1746	0.0904	0.0316	0.0101	5	-0.0725	0.1938	0.0348	0.0083	0.0013
7	-0.1642	0.1732	0.0943	0.0216	0.0101	7	0.0068	0.1984	0.0385	-0.0007	0.0051
10	-0.0383	0.1815	0.0918	0.0067	0.0124	10	0.1359	0.2213	0.0443	-0.0138	0.0122
20	0.4105	0.3408	0.0253	-0.0508	0.0303	20	0.6229	0.4197	-0.0441	-0.0758	0.0366
$M = 0.90$											
$M = 1.10$											
-3	-0.4781	0.2133	0.0571	0.0597	0.0161	-3	-0.3664	0.1866	0.0161	0.0426	0.0037
-2	-0.4445	0.2107	0.0681	0.0558	0.0132	-2	-0.3168	0.1811	0.0163	0.0387	0.0024
-1	-0.4213	0.2041	0.0686	0.0527	0.0125	-1	-0.2866	0.1757	0.0151	0.0334	0.0024
0	-0.3929	0.1976	0.0751	0.0495	0.0110	0	-0.2371	0.1757	0.0189	0.0295	0.0012
1	-0.3618	0.1976	0.0772	0.0448	0.0117	1	-0.2155	0.1735	0.0157	0.0249	0.0024
2	-0.3282	0.1924	0.0789	0.0417	0.0110	2	-0.1724	0.1757	0.0241	0.0203	0.0012
3	-0.2946	0.1845	0.0805	0.0369	0.0103	3	-0.1466	0.1691	0.0175	0.0164	0.0037
5	-0.2197	0.1806	0.0869	0.0275	0.0103	5	-0.0668	0.1746	0.0357	0.0085	0.0073
7	-0.1344	0.1806	0.0957	0.0189	0.0110	7	0.0108	0.1779	0.0347	-0.0007	0.0061
10	-0.0129	0.1871	0.0876	0.0047	0.0132	10	0.1401	0.2084	0.0397	-0.0151	0.0110
20	0.4264	-0.0510	0.0596	-0.0527	0.0315	20	0.6142	0.4125	-0.0470	-0.0734	0.0306

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(f) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$						$M = 0.95$					
-3	-0.4243	0.2256	0.1979	0.0490	0.0156	-3	-0.4215	0.2448	0.0744	0.0483	0.0232
-2	-0.4074	0.2192	0.0752	0.0465	0.0144	-2	-0.3843	0.2385	0.0835	0.0452	0.0211
-1	-0.3819	0.2170	0.0857	0.0439	0.0120	-1	-0.3471	0.2259	0.0836	0.0407	0.0204
0	-0.3649	0.2148	0.0912	0.0400	0.0120	0	-0.3149	0.2259	0.0794	0.0369	0.0204
1	-0.3310	0.2385	0.0841	-0.0916	0.0120	1	-0.2802	0.2197	0.0822	0.0332	0.0197
2	-0.3098	0.2342	0.0932	0.0361	0.0120	2	-0.2454	0.2134	0.0878	0.0294	0.0190
3	-0.2843	0.2320	0.0965	0.0323	0.0120	3	-0.2033	0.2071	0.0835	0.0256	0.0190
5	-0.2291	0.2277	0.1043	0.0245	0.0120	5	-0.1364	0.2071	0.0933	0.0181	0.0190
7	-0.1400	0.2256	0.1061	0.0168	0.0120	7	-0.0694	0.2046	0.1039	0.0106	0.0197
10	-0.0467	0.2428	0.1054	0.0052	0.0156	10	0.0273	0.2172	0.1136	-0.0023	0.0211
20	0.2970	0.3717	0.0800	-0.0452	0.0325	20	0.4091	0.3578	0.0598	-0.0528	0.0380
$M = 0.80$						$M = 1.00$					
-3	-0.4099	0.2327	0.0652	0.0481	0.0166	-3	-0.3877	0.2626	0.0530	0.0463	0.0236
-2	-0.3835	0.2283	0.0732	0.0454	0.0166	-2	-0.3568	0.2577	0.0640	0.0427	0.0223
-1	-0.3542	0.2238	0.0813	0.0418	0.0149	-1	-0.3187	0.2517	0.0702	0.0376	0.0209
0	-0.3337	0.2223	0.0826	0.0392	0.0141	0	-0.2973	0.2469	0.0703	0.0354	0.0202
1	-0.3074	0.2149	0.0792	0.0347	0.0141	1	-0.2545	0.2457	0.0718	0.0311	0.0202
2	-0.2635	0.2120	0.0796	0.0320	0.0141	2	-0.2165	0.2385	0.0706	0.0268	0.0202
3	-0.2283	0.2120	0.0861	0.0276	0.0133	3	-0.1879	0.2324	0.0698	0.0231	0.0202
5	-0.1552	0.2075	0.0923	0.0187	0.0133	5	-0.1094	0.2300	0.0827	0.0152	0.0196
7	-0.0878	0.2075	0.1056	0.0107	0.0133	7	-0.0357	0.2300	0.0817	0.0072	0.0216
10	0.0117	0.2223	0.1078	-0.0009	0.0166	10	0.0714	0.0000	0.1028	-0.0080	0.0236
20	0.3191	0.3409	0.0736	-0.0454	0.0316	20	0.4995	0.4035	0.0252	-0.0644	0.0439
$M = 0.85$						$M = 1.05$					
-3	-0.4000	0.2081	0.0673	0.0458	0.0187	-3	-0.3651	0.2469	0.0429	0.0441	0.0212
-2	-0.3726	0.2012	0.0757	0.0425	0.0179	-2	-0.3289	0.2412	0.0558	0.0400	0.0187
-1	-0.3535	0.2012	0.0816	0.0392	0.0171	-1	-0.3016	0.2365	0.0586	0.0359	0.0180
0	-0.3206	0.1942	0.0833	0.0367	0.0171	0	-0.2631	0.2331	0.0595	0.0324	0.0174
1	-0.2850	0.1942	0.0857	0.0325	0.0163	1	-0.2313	0.2297	0.0625	0.0283	0.0161
2	-0.2466	0.1901	0.0906	0.0283	0.0155	2	-0.0816	0.2297	0.0330	0.0248	0.0167
3	-0.2083	0.1859	0.0872	0.0242	0.0155	3	-0.1633	0.2239	0.0595	0.0214	0.0167
5	-0.1480	0.1817	0.1011	0.0183	0.0155	5	-0.0907	0.2239	0.0691	0.0131	0.0187
7	-0.0795	0.1845	0.1091	0.0100	0.0163	7	-0.0113	0.2239	0.0709	0.0041	0.0199
10	0.0247	0.2025	0.1085	-0.0025	0.0187	10	0.1111	0.2423	0.0757	-0.0117	0.0225
20	0.3398	0.3316	0.0865	-0.0467	0.0334	20	0.5330	0.4099	0.0041	-0.0669	0.0431
$M = 0.90$						$M = 1.10$					
-3	-0.4011	0.2175	0.0674	0.0464	0.0206	-3	-0.3475	0.2295	0.0385	0.0420	0.0196
-2	-0.3753	0.2162	0.0793	0.0441	0.0198	-2	-0.3129	0.2240	0.0494	0.0387	0.0184
-1	-0.3442	0.2083	0.0775	0.0394	0.0184	-1	-0.2870	0.2229	0.0558	0.0348	0.0165
0	-0.3183	0.2097	0.0912	0.0370	0.0176	0	-0.2525	0.2185	0.0589	0.0315	0.0153
1	-0.2743	0.2018	0.0836	0.0331	0.0176	1	-0.2158	0.2185	0.0523	0.0269	0.0153
2	-0.2407	0.1966	0.0881	0.0291	0.0169	2	-0.1856	0.2131	0.0572	0.0230	0.0159
3	-0.2045	0.1900	0.0841	0.0244	0.0169	3	-0.1489	0.2076	0.0611	0.0190	0.0196
5	-0.1527	0.1926	0.1105	0.0165	0.0162	5	-0.0734	0.2076	0.0645	0.0112	0.0184
7	-0.0699	0.1900	0.1049	0.0094	0.0169	7	0.0043	0.2120	0.0642	0.0026	0.0190
10	0.0311	0.2005	0.1088	-0.0031	0.0198	10	0.1209	0.2349	0.0705	-0.0131	0.0214
20	0.3571	0.3341	0.0822	-0.0480	0.0345	20	0.5309	0.3999	-0.0056	-0.0650	0.0398

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Concluded

(g) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.4617	0.1630	0.1423	0.0528	0.0240	-3	-0.4432	0.2119	0.1307	0.0535	0.0281
-2	-0.4194	0.1587	0.1465	0.0490	0.0216	-2	-0.3937	0.2056	0.1348	0.0489	0.0260
-1	-0.3855	0.1587	0.1528	0.0451	0.0204	-1	-0.3565	0.1993	0.1406	0.0452	0.0239
0	-0.3559	0.1459	0.1447	0.0412	0.0180	0	-0.3194	0.1931	0.1408	0.0407	0.0225
1	-0.3135	0.1501	0.1310	0.0386	0.0180	1	-0.2823	0.1893	0.1342	0.0361	0.0211
2	-0.2711	0.1459	0.1256	0.0361	0.0180	2	-0.2451	0.1805	0.1379	0.0309	0.0211
3	-0.2372	0.1459	0.1379	0.0322	0.0180	3	-0.2055	0.1830	0.1389	0.0271	0.0204
5	-0.1737	0.1459	0.1408	0.0245	0.0180	5	-0.1337	0.1805	0.1423	0.0188	0.0204
7	-0.0932	0.1587	0.1498	0.0155	0.0180	7	-0.0347	0.1868	0.1400	0.0075	0.0218
10	0.0254	0.1866	0.1408	0.0000	0.0180	10	0.1238	0.2081	0.1233	-0.0113	0.0246
20	0.5126	0.4054	0.0558	-0.0696	0.0445	20	0.6735	0.4275	0.0012	-0.0851	0.0513
$M = 0.80$											
-3	-0.4444	0.1762	0.1271	0.0525	0.0240	-3	-0.4395	0.2273	0.1280	0.0542	0.0270
-2	-0.4064	0.1717	0.1373	0.0489	0.0224	-2	-0.3943	0.2189	0.1369	0.0491	0.0236
-1	-0.3655	0.1687	0.1395	0.0445	0.0207	-1	-0.3540	0.2117	0.1399	0.0448	0.0236
0	-0.3391	0.1614	0.1281	0.0409	0.0207	0	-0.3183	0.2093	0.1414	0.0412	0.0236
1	-0.2982	0.1614	0.1335	0.0365	0.0191	1	-0.2851	0.2033	0.1348	0.0361	0.0202
2	-0.2602	0.1540	0.1316	0.0329	0.0191	2	-0.2470	0.1997	0.1397	0.0318	0.0202
3	-0.2193	0.1540	0.1296	0.0276	0.0174	3	-0.2019	0.1912	0.1363	0.0275	0.0202
5	-0.1520	0.1540	0.1384	0.0196	0.0166	5	-0.1283	0.1972	0.1426	0.0181	0.0195
7	-0.0614	0.1569	0.1437	0.0116	0.0174	7	-0.0214	0.2033	0.1353	0.0065	0.0202
10	0.0848	0.1836	0.1371	-0.0062	0.0207	10	0.1354	0.2273	0.1229	-0.0137	0.0243
20	0.5877	0.3982	0.0184	-0.0747	0.0456	20	0.6794	0.4559	0.0260	-0.0867	0.0532
$M = 0.85$											
-3	-0.4352	0.1816	0.1287	0.0541	0.0248	-3	-0.4394	0.2053	0.1282	0.0530	0.0225
-2	-0.4079	0.1788	0.1364	0.0499	0.0233	-2	-0.3828	0.1995	0.1309	0.0482	0.0193
-1	-0.3668	0.1732	0.1407	0.0449	0.0217	-1	-0.3375	0.1938	0.1353	0.0434	0.0186
0	-0.3285	0.1677	0.1303	0.0416	0.0210	0	-0.3035	0.1881	0.1348	0.0386	0.0167
1	-0.2902	0.1649	0.1315	0.0375	0.0194	1	-0.2809	0.1881	0.1315	0.0344	0.0161
2	-0.2436	0.1594	0.1345	0.0316	0.0194	2	-0.2355	0.1846	0.1383	0.0310	0.0161
3	-0.2135	0.1580	0.1301	0.0275	0.0179	3	-0.2016	0.1823	0.1322	0.0262	0.0161
5	-0.1396	0.1580	0.1394	0.0200	0.0179	5	-0.1065	0.1823	0.1416	0.0165	0.0154
7	-0.0520	0.1649	0.1442	0.0092	0.0179	7	-0.0023	0.1881	0.1298	0.0041	0.0161
10	0.0985	0.1857	0.1246	-0.0083	0.0210	10	0.1427	0.2236	0.1199	-0.0138	0.0199
20	0.6186	0.4075	0.0136	-0.0774	0.0481	20	0.6704	0.4541	0.0305	-0.0847	0.0469
$M = 0.90$											
-3	-0.4368	0.1937	0.1268	0.0534	0.0257	-3	-0.4289	0.1932	0.1295	0.0511	0.0232
-2	-0.3980	0.1858	0.1335	0.0487	0.0242	-2	-0.3685	0.1866	0.1269	0.0446	0.0202
-1	-0.3644	0.1819	0.1317	0.0448	0.0227	-1	-0.3427	0.1811	0.1305	0.0413	0.0202
0	-0.3205	0.1754	0.1387	0.0401	0.0213	0	-0.3104	0.1757	0.1264	0.0374	0.0189
1	-0.2817	0.1701	0.1297	0.0362	0.0205	1	-0.2716	0.1735	0.1334	0.0341	0.0202
2	-0.2429	0.1662	0.1300	0.0314	0.0205	2	-0.2241	0.1735	0.1317	0.0295	0.0153
3	-0.2042	0.1623	0.1306	0.0275	0.0198	3	-0.1811	0.1702	0.1262	0.0243	0.0134
5	-0.1318	0.1688	0.1477	0.0196	0.0198	5	-0.0884	0.1691	0.1328	0.0131	0.0165
7	-0.0491	0.1701	0.1429	0.0086	0.0198	7	0.0086	0.1790	0.1220	0.0020	0.0159
10	0.1137	0.1950	0.1254	-0.0102	0.0235	10	0.1530	0.2117	0.1116	-0.0157	0.0177
20	0.6306	0.4109	0.0098	-0.0786	0.0498	20	0.6530	0.4485	0.0241	-0.0852	0.0367
$M = 1.00$											
-3	-0.4395	0.2273	0.1280	0.0542	0.0270	-3	-0.4394	0.2053	0.1282	0.0530	0.0225
-2	-0.3943	0.2189	0.1369	0.0491	0.0236	-2	-0.3828	0.1995	0.1309	0.0482	0.0193
-1	-0.3540	0.2117	0.1399	0.0448	0.0236	-1	-0.3375	0.1938	0.1353	0.0434	0.0186
0	-0.3183	0.2093	0.1414	0.0412	0.0236	0	-0.3035	0.1881	0.1348	0.0386	0.0167
1	-0.2851	0.2033	0.1348	0.0361	0.0202	1	-0.2809	0.1881	0.1315	0.0344	0.0161
2	-0.2470	0.1997	0.1397	0.0318	0.0202	2	-0.2355	0.1846	0.1383	0.0310	0.0161
3	-0.2019	0.1912	0.1363	0.0275	0.0202	3	-0.2016	0.1823	0.1322	0.0262	0.0161
5	-0.1283	0.1972	0.1426	0.0181	0.0195	5	-0.1065	0.1823	0.1416	0.0165	0.0154
7	-0.0214	0.2033	0.1353	0.0065	0.0202	7	-0.0023	0.1881	0.1298	0.0041	0.0161
10	0.1354	0.2273	0.1229	-0.0137	0.0243	10	0.1427	0.2236	0.1199	-0.0138	0.0199
20	0.6794	0.4559	0.0260	-0.0867	0.0532	20	0.6704	0.4541	0.0305	-0.0847	0.0469
$M = 1.05$											
-3	-0.4394	0.2053	0.1282	0.0530	0.0225	-3	-0.4394	0.2053	0.1282	0.0530	0.0225
-2	-0.3828	0.1995	0.1309	0.0482	0.0193	-2	-0.3828	0.1995	0.1309	0.0482	0.0193
-1	-0.3375	0.1938	0.1353	0.0434	0.0186	-1	-0.3375	0.1938	0.1353	0.0434	0.0186
0	-0.3035	0.1881	0.1348	0.0386	0.0167	0	-0.3035	0.1881	0.1348	0.0386	0.0167
1	-0.2809	0.1881	0.1315	0.0344	0.0161	1	-0.2809	0.1881	0.1315	0.0344	0.0161
2	-0.2355	0.1846	0.1383	0.0310	0.0161	2	-0.2355	0.1846	0.1383	0.0310	0.0161
3	-0.2016	0.1823	0.1322	0.0262	0.0161	3	-0.2016	0.1823	0.1322	0.0262	0.0161
5	-0.1065	0.1823	0.1416	0.0165	0.0154	5	-0.1065	0.1823	0.1416	0.0165	0.0154
7	-0.0023	0.1881	0.1298	0.0041	0.0161	7	-0.0023	0.1881	0.1298	0.0041	0.0161
10	0.1427	0.2236	0.1199	-0.0138	0.0199	10	0.1427	0.2236	0.1199	-0.0138	0.0199
20	0.6704	0.4541	0.0305	-0.0847	0.0469	20	0.6704	0.4541	0.0305	-0.0847	0.0469
$M = 1.10$											
-3	-0.4289	0.1932	0.1295	0.0511	0.0232	-3	-0.4289	0.1932	0.1295	0.0511	0.0232
-2	-0.3685	0.1866	0.1269	0.0446	0.0202	-2	-0.3685	0.1866	0.1269	0.0446	0.0202
-1	-0.3427	0.1811	0.1305	0.0413	0.0202	-1	-0.3427	0.1811	0.1305	0.0413	0.0202
0	-0.3104	0.1757	0.1264	0.0374	0.0189	0	-0.3104	0.1757	0.1264	0.0374	0.0189
1	-0.2716	0.1735	0.1334	0.0341	0.0202	1	-0.2716	0.1735	0.1334	0.0341	0.0202
2	-0.2241	0.1735	0.1317	0.0295	0.0153	2	-0.2241	0.1735	0.1317	0.0295	0.0153
3	-0.1811	0.1702	0.1262	0.0243	0.0134	3	-0.1811	0.1702	0.1262	0.0243	0.0134
5	-0.0884	0.1691	0.1328	0.0131	0.0165	5	-0.0884	0.1691	0.1328	0.0131	0.0165
7	0.0086	0.1790	0.1220	0.0020	0.0159	7	0.0086	0.1790	0.1220	0.0020	0.0159
10	0.1530	0.2117	0.1116	-0.0157	0.0177	10	0.1530	0.2117	0.1116	-0.0157	0.0177
20	0.6530	0.4485	0.0241	-0.0852	0.0367	20	0.6530	0.4485	0.0241	-0.0852	0.0367

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.80$											
-3	-0.1689	0.0167	0.0009	0.0200	0.0018	-3	-0.2045	0.0181	-0.0179	0.0246	0.0034
-2	-0.1154	0.0167	0.0012	0.0138	0.0018	-2	-0.1356	0.0108	-0.0152	0.0159	0.0027
-1	-0.0783	0.0125	0.0024	0.0088	0.0012	-1	-0.0713	0.0084	-0.0081	0.0080	0.0024
0	-0.0206	0.0083	0.0052	0.0038	0.0012	0	0.0000	0.0096	-0.0027	0.0014	0.0020
1	0.0330	0.0167	0.0032	-0.0025	0.0012	1	0.0595	0.0084	0.0071	-0.0065	0.0024
2	0.0700	0.0167	0.0112	-0.0088	0.0012	2	0.1189	0.0120	0.0148	-0.0130	0.0027
3	0.1319	0.0209	0.0187	-0.0150	0.0012	3	0.1903	0.0181	0.0162	-0.0217	0.0037
5	0.2225	0.0292	0.0247	-0.0276	0.0029	5	0.3044	0.0349	0.0152	-0.0362	0.0061
7	0.3338	0.0522	0.0309	-0.0413	0.0058	7	0.4519	0.0662	-0.0037	-0.0542	0.0111
10	0.5068	0.1022	0.0241	-0.0639	0.0129	10	0.6136	0.1204	-0.0193	-0.0767	0.0189
20	0.7623	0.3213	-0.0890	-0.0752	0.0438	20	0.9871	0.3817	-0.1308	-0.1229	0.0543
$M = 0.85$											
-3	-0.1937	0.0142	-0.0087	0.0222	0.0020	-3	-0.2254	0.0254	0.0031	0.0277	0.0039
-2	-0.1348	0.0128	-0.0055	0.0154	0.0020	-2	-0.1548	0.0196	0.0013	0.0187	0.0029
-1	-0.0730	0.0085	-0.0006	0.0085	0.0016	-1	-0.0819	0.0138	-0.0010	0.0104	0.0026
0	-0.0140	0.0099	0.0035	0.0026	0.0008	0	-0.0068	0.0138	0.0004	0.0014	0.0023
1	0.0393	0.0114	0.0098	-0.0034	0.0020	1	0.0706	0.0184	-0.0011	-0.0069	0.0023
2	0.0870	0.0128	0.0159	-0.0102	0.0016	2	0.1366	0.0184	-0.0018	-0.0152	0.0032
3	0.1404	0.0156	0.0228	-0.0171	0.0024	3	0.2163	0.0254	-0.0027	-0.0242	0.0045
5	0.2527	0.0284	0.0339	-0.0299	0.0044	5	0.3301	0.0461	-0.0062	-0.0381	0.0074
7	0.3846	0.0554	0.0364	-0.0461	0.0076	7	0.4553	0.0749	-0.0223	-0.0554	0.0116
10	0.5615	0.1052	0.0221	-0.0700	0.0159	10	0.6488	0.1325	-0.0515	-0.0796	0.0200
20	0.7693	0.3141	-0.0874	-0.0973	0.0414	20	1.1109	0.4207	-0.1206	-0.1419	0.0604
$M = 0.90$											
-3	-0.1968	0.0146	-0.0116	0.0239	0.0026	-3	-0.2179	0.0287	0.0085	0.0265	0.0034
-2	-0.1286	0.0120	-0.0067	0.0160	0.0022	-2	-0.1416	0.0221	0.0027	0.0172	0.0025
-1	-0.0656	0.0106	-0.0019	0.0088	0.0019	-1	-0.0763	0.0177	0.0015	0.0099	0.0019
0	-0.0131	0.0106	0.0033	0.0024	0.0019	0	0.0000	0.0165	-0.0006	0.0007	0.0019
1	0.0394	0.0106	0.0085	-0.0032	0.0019	1	0.0741	0.0188	-0.0028	-0.0073	0.0015
2	0.1050	0.0120	0.0170	-0.0096	0.0019	2	0.1416	0.0232	-0.0051	-0.0152	0.0028
3	0.1312	0.0186	0.0331	-0.0176	0.0026	3	0.2070	0.0298	-0.0082	-0.0225	0.0040
5	0.2755	0.0319	0.0357	-0.0319	0.0045	5	0.3269	0.0485	-0.0148	-0.0378	0.0065
7	0.4120	0.0584	0.0318	-0.0495	0.0082	7	0.4467	0.0761	-0.0290	-0.0530	0.0102
10	0.5773	0.1076	0.0147	-0.0718	0.0160	10	0.6428	0.1346	-0.0599	-0.0775	0.0188
20	0.7977	0.3241	-0.0977	-0.1005	0.0428	20	1.1549	0.4413	-0.1530	-0.1471	0.0624
$M = 1.00$											
$M = 1.05$											
-3	-0.1939	0.0126	-0.0188	0.0227	0.0035	-3	-0.2179	0.0287	0.0085	0.0265	0.0034
-2	-0.1292	0.0101	-0.0156	0.0151	0.0028	-2	-0.1423	0.0221	0.0027	0.0172	0.0025
-1	-0.0621	0.0076	-0.0095	0.0076	0.0021	-1	-0.0670	0.0191	0.0010	0.0083	0.0015
0	-0.0075	0.0076	-0.0044	0.0008	0.0018	0	0.0000	0.0159	0.0006	0.0000	0.0012
1	0.0497	0.0088	0.0043	-0.0053	0.0021	1	0.0732	0.0180	-0.0032	-0.0076	0.0015
2	0.1044	0.0101	0.0127	-0.0121	0.0025	2	0.1360	0.0223	-0.0073	-0.0146	0.0024
3	0.1740	0.0164	0.0231	-0.0204	0.0035	3	0.2093	0.0297	-0.0111	-0.0229	0.0036
5	0.2908	0.0315	0.0249	-0.0340	0.0053	5	0.3244	0.0477	-0.0174	-0.0369	0.0062
7	0.4275	0.0591	0.0165	-0.0521	0.0095	7	0.4353	0.0742	-0.0295	-0.0509	0.0098
10	0.5841	0.1133	0.0001	0.1527	0.0169	10	0.6173	0.1271	-0.0592	-0.0732	0.0172
20	0.8576	0.3423	-0.1154	-0.1081	0.0465	20	1.1301	0.4312	-0.1572	-0.1413	0.0596
$M = 1.10$											

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(b) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-3	-0.3699	0.1664	-0.2561	0.0925	0.0256
-2	-0.3616	0.1664	-0.2530	0.0875	0.0256
-1	-0.3493	0.1727	-0.2223	0.0837	0.0256
0	-0.3288	0.1727	-0.2167	0.0762	0.0245
1	-0.3164	0.1768	-0.2263	0.0700	0.0245
2	-0.2794	0.1768	-0.2156	0.0600	0.0245
3	-0.2466	0.1789	-0.2108	0.0500	0.0239
5	-0.1644	0.1852	-0.1964	0.0300	0.0239
7	-0.0740	0.1873	-0.1862	0.0087	0.0239
10	0.0617	0.1997	-0.1653	-0.0300	0.0245
20	0.4849	0.3121	-0.0601	-0.1337	0.0414
$M = 0.80$					
-3	-0.4199	0.1956	-0.0688	0.0536	0.0294
-2	-0.4087	0.1941	-0.0618	0.0511	0.0290
-1	-0.3891	0.1941	-0.0546	0.0485	0.0282
0	-0.3779	0.1956	-0.0511	0.0460	0.0278
1	-0.3639	0.1956	-0.0524	0.0434	0.0278
2	-0.3359	0.1941	-0.0509	0.0409	0.0274
3	-0.2939	0.1927	-0.0559	0.0349	0.0270
5	-0.2183	0.1913	-0.0633	0.0238	0.0262
7	-0.1176	0.1941	-0.0675	0.0111	0.0258
10	0.0700	0.1984	-0.0767	-0.0136	0.0254
20	0.5038	0.3118	-0.1036	-0.0681	0.0421
$M = 0.85$					
-3	-0.4183	0.2012	-0.0648	0.0533	0.0300
-2	-0.4078	0.1985	-0.0595	0.0517	0.0297
-1	-0.3921	0.1998	-0.0517	0.0501	0.0293
0	-0.3791	0.1998	-0.0478	0.0477	0.0289
1	-0.3660	0.1985	-0.0483	0.0445	0.0282
2	-0.3399	0.1985	-0.0396	0.0421	0.0274
3	-0.3137	0.1985	-0.0479	0.0374	0.0271
5	-0.2353	0.1959	-0.0554	0.0262	0.0263
7	-0.1359	0.1946	-0.0629	0.0127	0.0256
10	0.0601	0.1972	-0.0746	-0.0127	0.0252
20	0.5281	0.3110	-0.1134	-0.0707	0.0423
$M = 0.90$					
-3	-0.4283	0.2156	-0.0648	0.0550	0.0312
-2	-0.4233	0.2131	-0.0571	0.0534	0.0305
-1	-0.4085	0.2131	-0.0486	0.0512	0.0302
0	-0.3961	0.2156	-0.0430	0.0489	0.0295
1	-0.3837	0.2118	-0.0289	0.0474	0.0295
2	-0.3565	0.2118	-0.0353	0.0444	0.0284
3	-0.3293	0.2081	-0.0417	0.0399	0.0281
5	-0.2426	0.2056	-0.0480	0.0286	0.0270
7	-0.1386	0.2031	-0.0604	0.0143	0.0260
10	0.0594	0.2005	-0.0752	-0.0113	0.0253
20	0.5719	0.3259	-0.1242	-0.0753	0.0435

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-3	-0.4264	0.2435	-0.0685	0.0526	0.0336
-2	-0.4027	0.2327	-0.0617	0.0490	0.0322
-1	-0.3648	0.2291	-0.0595	0.0454	0.0312
0	-0.3388	0.2279	-0.0578	0.0411	0.0306
1	-0.3222	0.2279	-0.0510	0.0403	0.0299
2	-0.2961	0.2243	-0.0532	0.0353	0.0292
3	-0.2724	0.2219	-0.0515	0.0324	0.0282
5	-0.2037	0.2159	-0.0534	0.0223	0.0275
7	-0.1256	0.2099	-0.0607	0.0122	0.0269
10	0.0853	0.2087	-0.0798	-0.0151	0.0262
20	0.6515	0.3478	-0.1497	-0.0836	0.0480
$M = 1.00$					
-3	-0.3150	0.2398	-0.0951	0.0386	0.0328
-2	-0.2787	0.2340	-0.0875	0.0338	0.0318
-1	-0.2266	0.2340	-0.0875	0.0282	0.0308
0	-0.2107	0.2329	-0.0804	0.0248	0.0305
1	-0.1858	0.2229	-0.0807	0.0220	0.0302
2	-0.1473	0.2229	-0.0856	0.0193	0.0302
3	-0.1020	0.2260	-0.0922	0.0193	0.0296
5	-0.0295	0.2352	-0.0960	0.0021	0.0296
7	0.0113	0.2294	-0.0954	-0.0028	0.0286
10	0.1722	0.2237	-0.0996	-0.0234	0.0283
20	0.7432	0.3786	-0.1753	-0.0965	0.0537
$M = 1.05$					
-3	-0.2929	0.2318	-0.0938	0.0363	0.0305
-2	-0.2452	0.2263	-0.0896	0.0317	0.0295
-1	-0.1974	0.2252	-0.0941	0.0237	0.0283
0	-0.1562	0.2252	-0.0944	0.0185	0.0280
1	-0.1150	0.2307	-0.0961	0.0139	0.0274
2	-0.0759	0.2307	-0.0977	0.0079	0.0283
3	-0.0434	0.2307	-0.1051	0.0040	0.0277
5	0.0369	0.2307	-0.1155	-0.0059	0.0280
7	0.1237	0.2373	-0.1204	-0.0172	0.0289
10	0.2820	0.2449	-0.1255	-0.0369	0.0314
20	0.8353	0.4119	-0.2011	-0.1069	0.0585
$M = 1.10$					
-3	-0.2834	0.2215	-0.0906	0.0367	0.0275
-2	-0.2292	0.2141	-0.0900	0.0298	0.0263
-1	-0.1834	0.2141	-0.0885	0.0241	0.0257
0	-0.1396	0.2162	-0.0875	0.0196	0.0248
1	-0.1042	0.2184	-0.1447	0.0139	0.0236
2	-0.0688	0.2205	-0.0948	0.0089	0.0248
3	-0.0271	0.2215	-0.0963	0.0038	0.0257
5	0.0479	0.2257	-0.1089	-0.0063	0.0260
7	0.1354	0.2278	-0.1192	-0.0184	0.0278
10	0.2917	0.2405	-0.1242	-0.0374	0.0293
20	0.8334	0.4114	-0.2019	-0.1064	0.0573

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(c) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-3	-0.3248	0.1977	-0.0393	0.0437	0.0315
-2	-0.3330	0.2040	-0.0369	0.0425	0.0315
-1	-0.3330	0.2081	-0.0297	0.0425	0.0309
0	-0.3330	0.2102	-0.0282	0.0425	0.0309
1	-0.3330	0.2123	-0.0281	0.0400	0.0297
2	-0.3207	0.2102	-0.0332	0.0387	0.0297
3	-0.3124	0.2144	-0.0271	0.0362	0.0297
5	-0.2713	0.2164	-0.0279	0.0300	0.0297
7	-0.2097	0.2185	-0.0317	0.0200	0.0291
10	-0.0822	0.2185	-0.0479	0.0025	0.0291
20	0.3905	0.3143	-0.0922	-0.0550	0.0426
$M = 0.80$					
-3	-0.3221	0.2170	-0.0398	0.0417	0.0326
-2	-0.3109	0.2212	-0.0364	0.0409	0.0322
-1	-0.3165	0.2255	-0.0249	0.0409	0.0322
0	-0.3249	0.2269	-0.0222	0.0417	0.0322
1	-0.3277	0.2269	-0.0225	0.0417	0.0322
2	-0.3277	0.2269	-0.0165	0.0400	0.0322
3	-0.3137	0.2269	-0.0124	0.0383	0.0318
5	-0.2941	0.2255	-0.0124	0.0341	0.0314
7	-0.2465	0.2198	-0.0176	0.0256	0.0302
10	-0.0868	0.2127	-0.0285	0.0034	0.0298
20	0.4117	0.3035	-0.0992	-0.0579	0.0429
$M = 0.85$					
-3	-0.3062	0.2199	-0.0444	0.0390	0.0327
-2	-0.3036	0.2239	-0.0385	0.0374	0.0327
-1	-0.3036	0.2252	-0.0314	0.0366	0.0323
0	-0.3088	0.2265	-0.0231	0.0382	0.0319
1	-0.3167	0.2265	-0.0243	0.0390	0.0327
2	-0.3245	0.2305	-0.0168	0.0390	0.0327
3	-0.3167	0.2279	-0.0125	0.0374	0.0323
5	-0.3036	0.2252	-0.0098	0.0350	0.0022
7	-0.2512	0.2199	-0.0147	0.0271	0.0308
10	-0.0942	0.2133	-0.0249	0.0048	0.0301
20	0.4292	0.3060	-0.1028	-0.0597	0.0434
$M = 0.90$					
-3	-0.3152	0.2387	-0.0202	0.0385	0.0334
-2	-0.3027	0.2249	-0.0473	0.0370	0.0331
-1	-0.2978	0.2312	-0.0336	0.0355	0.0331
0	-0.3052	0.2387	-0.0264	0.0377	0.0334
1	-0.3176	0.2374	-0.0181	0.0392	0.0334
2	-0.3251	0.2362	-0.0111	0.0392	0.0331
3	-0.3127	0.2324	-0.0040	0.0362	0.0324
5	-0.2606	0.2249	-0.0094	0.0272	0.0310
7	-0.2481	0.2211	-0.0090	0.0272	0.0303
10	-0.1017	0.2186	-0.0227	0.0045	0.0303
20	0.4516	0.3141	-0.1122	-0.0641	0.0443

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-3	-0.3175	0.2411	-0.0448	0.0375	0.0349
-2	-0.3104	0.2459	-0.0409	0.0375	0.0356
-1	-0.3128	0.2519	-0.0380	0.0375	0.0356
0	-0.3175	0.2519	-0.0313	0.0389	0.0356
1	-0.3223	0.2519	-0.0299	0.0382	0.0356
2	-0.3223	0.2519	-0.0244	0.0375	0.0356
3	-0.3033	0.2519	-0.0230	0.0346	0.0349
5	-0.2488	0.2483	-0.0276	0.0259	0.0339
7	-0.1683	0.2411	-0.0358	0.0151	0.0329
10	-0.0332	0.2339	-0.0371	-0.0029	0.0319
20	0.5047	0.3299	-0.1236	-0.0699	0.0464
$M = 1.00$					
-3	-0.2970	0.2698	-0.0600	0.0317	0.0383
-2	-0.2517	0.2755	-0.0628	0.0269	0.0379
-1	-0.2290	0.2698	-0.0589	0.0234	0.0379
0	-0.2063	0.2721	-0.0587	0.0214	0.0373
1	-0.1723	0.2743	-0.0672	0.0152	0.0370
2	-0.1496	0.2732	-0.0614	0.0124	0.0367
3	-0.1383	0.2663	-0.0654	0.0110	0.0360
5	-0.0476	0.2640	-0.0776	-0.0007	0.0357
7	-0.0023	0.2583	-0.0771	-0.0062	0.0341
10	0.0884	0.2514	-0.0733	-0.0179	0.0341
20	0.6213	0.3696	-0.1592	-0.0869	0.0534
$M = 1.05$					
-3	-0.2736	0.2660	-0.0630	0.0297	0.0351
-2	-0.2301	0.2682	-0.0616	0.0244	0.0333
-1	-0.1976	0.2649	-0.0630	0.0198	0.0342
0	-0.1650	0.2649	-0.0662	0.0152	0.0342
1	-0.1390	0.2660	-0.0734	0.0106	0.0326
2	-0.0999	0.2682	-0.0739	0.0059	0.0333
3	-0.0651	0.2649	-0.0795	0.0013	0.0333
5	-0.0022	0.2660	-0.0855	-0.0073	0.0329
7	0.0825	0.2638	-0.0935	-0.0178	0.0333
10	0.2062	0.2671	-0.0928	-0.0337	0.0351
20	0.7468	0.4089	-0.1910	-0.1010	0.0573
$M = 1.10$					
-3	-0.2647	0.2543	-0.0600	0.0292	0.0316
-2	-0.2209	0.2543	-0.0574	0.0294	0.0319
-1	-0.1897	0.2532	-0.0605	0.0190	0.0304
0	-0.1542	0.2543	-0.0646	0.0152	0.0301
1	-0.1209	0.2543	-0.0723	0.0101	0.0290
2	-0.0959	0.2564	-0.0726	0.0057	0.0296
3	-0.0563	0.2554	-0.0778	0.0013	0.0301
5	0.0083	0.2554	-0.0841	-0.0070	0.0301
7	0.0917	0.2554	-0.0912	-0.0177	0.0307
10	0.2272	0.2606	-0.0946	-0.0355	0.0331
20	0.7274	0.4010	-0.1883	-0.1001	0.0568

TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(d) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.80$											
-3	-0.5357	0.1898	-0.0252	0.0689	0.0257	-3	-0.5334	0.2496	-0.0392	0.0692	0.0306
-2	-0.5151	0.1878	-0.0115	0.0664	0.0240	-2	-0.4978	0.2424	-0.0247	0.0641	0.0292
-1	-0.4945	0.1878	-0.0024	0.0626	0.0234	-1	-0.4622	0.2400	-0.0174	0.0591	0.0282
0	-0.4739	0.1878	-0.0002	0.0601	0.0234	0	-0.4267	0.2364	-0.0073	0.0533	0.0272
1	-0.4533	0.1878	0.0007	0.0551	0.0228	1	-0.3911	0.2340	-0.0060	0.0497	0.0269
2	-0.4327	0.1857	0.0028	0.0526	0.0222	2	-0.3556	0.2280	0.0019	0.0454	0.0259
3	-0.4038	0.1836	0.0097	0.0489	0.0210	3	-0.3176	0.2220	0.0068	0.0396	0.0255
5	-0.3296	0.1794	0.0114	0.0376	0.0210	5	-0.2252	0.2100	0.0097	0.0303	0.0239
7	-0.2266	0.1752	0.0106	0.0251	0.0193	7	-0.0996	0.2040	0.0105	0.0137	0.0235
10	-0.0949	0.1731	0.0105	0.0013	0.0193	10	0.0759	0.2040	0.0122	-0.0086	0.0239
20	0.3956	0.3025	-0.0496	-0.0539	0.0356	20	0.4907	0.3180	-0.0556	-0.0627	0.0397
$M = 0.85$											
-3	-0.5555	0.2188	-0.0154	0.0700	0.0271	-3	-0.4489	0.2525	-0.0761	0.0531	0.0305
-2	-0.5331	0.2131	-0.0022	0.0665	0.0263	-2	-0.3855	0.2468	-0.0746	0.0455	0.0293
-1	-0.5050	0.2102	0.0055	0.0631	0.0251	-1	-0.3288	0.2434	-0.0676	0.0386	0.0280
0	-0.4882	0.2060	0.0177	0.0606	0.0243	0	-0.2880	0.2411	-0.0612	0.0338	0.0277
1	-0.4658	0.2060	0.0190	0.0572	0.0243	1	-0.2494	0.1263	-0.0607	0.0283	0.0277
2	-0.4405	0.2017	0.0259	0.0537	0.0235	2	-0.2154	0.2376	-0.0529	0.0248	0.0273
3	-0.4068	0.1989	0.0323	0.0486	0.0227	3	-0.1814	0.2319	-0.0433	0.0241	0.0267
5	-0.3311	0.1889	0.0352	0.0392	0.0215	5	-0.1134	0.2181	-0.0305	0.0159	0.0260
7	-0.2301	0.1790	0.0398	0.0256	0.0203	7	-0.0113	0.2147	-0.0227	0.0028	0.0251
10	-0.0281	0.1719	0.0331	0.0000	0.0199	10	0.1814	0.2181	-0.0212	-0.0200	0.0267
20	0.4068	0.2940	-0.0375	-0.0546	0.0358	20	0.5782	0.3444	-0.0796	-0.0710	0.0447
$M = 0.90$											
-3	-0.5628	0.2253	-0.0170	0.0724	0.0282	-3	-0.4255	0.2429	-0.0776	0.0522	0.0296
-2	-0.5236	0.2187	-0.0050	0.0685	0.0264	-2	-0.3669	0.2363	-0.0750	0.0442	0.0280
-1	-0.5026	0.2160	0.0093	0.0653	0.0256	-1	-0.3105	0.2341	-0.0702	0.0376	0.0274
0	-0.4764	0.2120	0.0173	0.0629	0.0252	0	-0.2714	0.2319	-0.0627	0.0323	0.0271
1	-0.4581	0.2120	0.0206	0.0597	0.0249	1	-0.2280	0.2308	-0.0624	0.0277	0.0262
2	-0.4319	0.2054	0.0292	0.0565	0.0241	2	-0.1845	0.2308	-0.0579	0.0224	0.0262
3	-0.3979	0.2014	0.0352	0.0525	0.0230	3	-0.1368	0.2264	-0.0556	0.0165	0.0265
5	-0.3272	0.1922	0.0400	0.0430	0.0219	5	-0.0478	0.2220	-0.0494	0.0059	0.0256
7	-0.2356	0.1842	0.0456	0.0302	0.0208	7	0.0608	0.2187	-0.0418	-0.0066	0.0256
10	-0.0209	0.1763	0.0391	0.0032	0.0200	10	0.2280	0.2231	-0.0373	-0.0257	0.0277
20	0.4188	0.2942	-0.0379	-0.0525	0.0360	20	0.6730	0.3792	-0.1116	-0.0832	0.0511
$M = 0.95$											
-3	-0.5702	0.2385	-0.0174	0.0731	0.0295	-3	-0.4148	0.2374	-0.0711	0.0501	0.0254
-2	-0.5330	0.2297	-0.0056	0.0686	0.0278	-2	-0.3585	0.2290	-0.0775	0.0437	0.0269
-1	-0.5032	0.2272	0.0055	0.0648	0.0271	-1	-0.3022	0.2258	-0.0722	0.0361	0.0260
0	-0.4834	0.2259	0.0169	0.0618	0.0264	0	-0.2564	0.2248	-0.0630	0.0311	0.0254
1	-0.4661	0.2221	0.0219	0.0595	0.0260	1	-0.2168	0.2248	-0.0605	0.0266	0.0248
2	-0.4338	0.2184	0.0281	0.0558	0.0250	2	-0.1709	0.2216	-0.0571	0.0215	0.0245
3	-0.3966	0.2121	0.0352	0.0513	0.0239	3	-0.1292	0.2205	-0.0534	0.0152	0.0242
5	-0.3148	0.2008	0.0407	0.0407	0.0225	5	-0.0417	0.2162	-0.0468	0.0038	0.0239
7	-0.2107	0.1895	0.0451	0.0271	0.0214	7	0.0667	0.2110	-0.0405	-0.0095	0.0236
10	0.0000	0.1845	0.0371	0.0015	0.0211	10	0.2439	0.2216	-0.0375	-0.0279	0.0260
20	0.4437	0.3012	-0.0447	-0.0550	0.0373	20	0.6920	0.3852	-0.1185	-0.0856	0.0508
$M = 1.00$											
$M = 1.05$											
-3	-0.4255	0.2429	-0.0761	0.0522	0.0296	-3	-0.4255	0.2429	-0.0761	0.0522	0.0296
-2	-0.3669	0.2363	-0.0750	0.0442	0.0280	-2	-0.3669	0.2363	-0.0750	0.0442	0.0280
-1	-0.3105	0.2341	-0.0702	0.0376	0.0274	-1	-0.3105	0.2341	-0.0702	0.0376	0.0274
0	-0.2714	0.2319	-0.0627	0.0323	0.0271	0	-0.2714	0.2319	-0.0627	0.0323	0.0271
1	-0.2280	0.2308	-0.0624	0.0277	0.0262	1	-0.2280	0.2308	-0.0624	0.0277	0.0262
2	-0.1845	0.2308	-0.0579	0.0224	0.0262	2	-0.1845	0.2308	-0.0579	0.0224	0.0262
3	-0.1368	0.2264	-0.0556	0.0165	0.0265	3	-0.1368	0.2264	-0.0556	0.0165	0.0265
5	-0.0478	0.2220	-0.0494	0.0059	0.0256	5	-0.0478	0.2220	-0.0494	0.0059	0.0256
7	0.0608	0.2187	-0.0418	-0.0066	0.0256	7	0.0608	0.2187	-0.0418	-0.0066	0.0256
10	0.2280	0.2231	-0.0373	-0.0257	0.0277	10	0.2280	0.2231	-0.0373	-0.0257	0.0277
20	0.6730	0.3792	-0.1116	-0.0832	0.0511	20	0.6730	0.3792	-0.1116	-0.0832	0.0511
$M = 1.10$											
-3	-0.4148	0.2374	-0.0711	0.0501	0.0254	-3	-0.4148	0.2374	-0.0711	0.0501	0.0254
-2	-0.3585	0.2290	-0.0775	0.0437	0.0269	-2	-0.3585	0.2290	-0.0775	0.0437	0.0269
-1	-0.3022	0.2258	-0.0722	0.0361	0.0260	-1	-0.3022	0.2258	-0.0722	0.0361	0.0260
0	-0.2564	0.2248	-0.0630	0.0311	0.0254	0	-0.2564	0.2248	-0.0630	0.0311	0.0254
1	-0.2168	0.2248	-0.0605	0.0266	0.0248	1	-0.2168	0.2248	-0.0605	0.0266	0.0248
2	-0.1709	0.2216	-0.0571	0.0215	0.0245	2	-0.1709	0.2216	-0.0571	0.0215	0.0245
3	-0.1292	0.2205	-0.0534	0.0152	0.0242	3	-0.1292	0.2205	-0.0534	0.0152	0.0242
5	-0.0417	0.2162	-0.0468	0.0038	0.0239	5	-0.0417	0.2162	-0.0468	0.0038	0.0239
7	0.0667	0.2110	-0.0405	-0.0095	0.0236	7	0.0667	0.2110	-0.0405	-0.0095	0.0236
10	0.2439	0.2216	-0.0375	-0.0279	0.0260	10	0.2439	0.2216	-0.0375	-0.0279	0.0260
20	0.6920	0.3852	-0.1185	-0.0856	0.0508	20	0.6920	0.3852	-0.1185	-0.0856	0.0508

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TABLE II.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(e) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.4769	0.2185	0.0128	0.0587	0.0286	-3	-0.4621	0.2699	-0.0103	0.0569	0.0339
-2	-0.4604	0.2185	0.0249	0.0562	0.0280	-2	-0.4313	0.2639	0.0007	0.0533	0.0329
-1	-0.4522	0.2185	0.0370	0.0537	0.0268	-1	-0.4029	0.2639	0.0124	0.0504	0.0323
0	-0.4358	0.2185	0.0400	0.0525	0.0268	0	-0.3815	0.2603	0.0192	0.0483	0.0316
1	-0.4234	0.2185	0.0416	0.0512	0.0274	1	-0.3673	0.2639	0.0250	0.0454	0.0319
2	-0.4070	0.2144	0.0481	0.0500	0.0262	2	-0.3483	0.2579	0.0370	0.0425	0.0313
3	-0.3905	0.2123	0.0545	0.0475	0.0257	3	-0.3199	0.2579	0.0400	0.0389	0.0309
5	-0.3371	0.2081	0.0646	0.0412	0.0251	5	-0.2441	0.2459	0.0521	0.0303	0.0289
7	-0.2549	0.1977	0.0688	0.0300	0.0233	7	-0.1422	0.2339	0.0613	0.0166	0.0279
10	-0.0987	0.1977	0.0674	0.0100	0.0227	10	0.0118	0.2279	0.0575	-0.0014	0.0276
20	0.2672	0.2914	0.0215	-0.0375	0.0338	20	0.3792	0.3119	0.0101	-0.0461	0.0383
$M = 0.80$											
-3	-0.4482	0.2354	-0.0064	0.0554	0.0290	-3	-0.4081	0.2916	-0.0402	0.0483	0.0367
-2	-0.4286	0.2340	0.0057	0.0528	0.0286	-2	-0.3628	0.2870	-0.0337	0.0448	0.0354
-1	-0.4117	0.2326	0.0193	0.0511	0.0278	-1	-0.3514	0.2870	-0.0155	0.0407	0.0347
0	-0.3921	0.2297	0.0244	0.0485	0.0274	0	-0.2948	0.2847	-0.0246	0.0345	0.0347
1	-0.3753	0.2283	0.0301	0.0460	0.0274	1	-0.2494	0.2812	-0.0245	0.0296	0.0341
2	-0.3613	0.2269	0.0397	0.0451	0.0270	2	-0.2154	0.2812	-0.0185	0.0248	0.0338
3	-0.3417	0.2255	0.0510	0.0417	0.0266	3	-0.2041	0.2755	-0.0065	0.0221	0.0331
5	-0.2885	0.2127	0.0634	0.0358	0.0250	5	-0.1134	0.2640	0.0034	0.0124	0.0315
7	-0.2101	0.2028	0.0772	0.0264	0.0238	7	-0.0567	0.2457	0.0225	0.0055	0.0296
10	-0.0532	0.1999	0.0749	0.0060	0.0234	10	0.0907	0.2411	0.0274	0.0565	0.0299
20	0.2801	0.2865	0.0319	-0.0383	0.0346	20	0.4308	0.3329	-0.0092	-0.0538	0.0418
$M = 0.85$											
-3	-0.4449	0.2385	-0.0124	0.0541	0.0297	-3	-0.3885	0.2824	-0.0480	0.0436	0.0348
-2	-0.4109	0.2371	0.0023	0.0501	0.0289	-2	-0.3364	0.2802	-0.0411	0.0383	0.0342
-1	-0.3952	0.2385	0.0120	0.0485	0.0289	-1	-0.2995	0.2780	-0.0362	0.0337	0.0335
0	-0.3768	0.3657	0.0210	0.0454	0.0282	0	-0.2583	0.2769	-0.0295	0.0290	0.0329
1	-0.3585	0.2318	0.0242	0.0446	0.0282	1	-0.2236	0.2747	-0.0273	0.0251	0.0326
2	-0.3402	0.2279	0.0362	0.0422	0.0278	2	-0.1866	0.2725	-0.0256	0.0205	0.0323
3	-0.3271	0.2265	0.0472	0.0406	0.0271	3	-0.1628	0.2637	-0.0175	0.0172	0.0317
5	-0.2748	0.2146	0.0615	0.0342	0.0252	5	-0.0651	0.2582	-0.0167	0.0053	0.0308
7	-0.1963	0.2053	0.0731	0.0239	0.0241	7	0.0434	0.2560	-0.0113	-0.0079	0.0302
10	-0.0393	0.2027	0.0726	0.0048	0.0241	10	0.2170	0.2615	-0.0156	-0.0271	0.0323
20	0.2879	0.2888	0.0285	-0.0382	0.0349	20	0.5317	0.3626	-0.0448	-0.0673	0.0474
$M = 0.90$											
-3	-0.4459	0.2446	-0.0137	0.0542	0.0309	-3	-0.3814	0.2733	-0.0487	0.0412	0.0334
-2	-0.4162	0.2446	0.0022	0.0512	0.0302	-2	-0.3335	0.2691	-0.0456	0.0355	0.0322
-1	-0.3914	0.2421	0.0102	0.0490	0.0299	-1	-0.2897	0.2680	-0.0360	0.0311	0.0313
0	-0.3716	0.2408	0.0222	0.0459	0.0292	0	-0.2501	0.2659	-0.0279	0.0260	0.0304
1	-0.3567	0.2446	0.0237	0.0444	0.0295	1	-0.2084	0.2659	-0.0278	0.0190	0.0304
2	-0.3419	0.2446	0.0417	0.0437	0.0292	2	-0.1730	0.2638	-0.0261	0.0146	0.0301
3	-0.3220	0.1756	0.0469	0.0414	0.0285	3	-0.1355	0.2585	-0.0250	0.0095	0.0296
5	-0.2651	0.2258	0.0625	0.0331	0.0267	5	-0.0542	0.2532	-0.0165	-0.0006	0.0290
7	-0.1858	0.2132	0.0708	0.0234	0.0249	7	0.0521	0.2480	-0.0135	-0.0133	0.0284
10	-0.0322	0.2082	0.0751	0.0045	0.0249	10	0.2084	0.2554	-0.0146	-0.0317	0.0310
20	0.3097	0.2947	0.0260	-0.0407	0.0362	20	0.5419	0.3693	-0.0557	-0.0748	0.0482
$M = 1.00$											
-3	-0.4081	0.2916	-0.0402	0.0483	0.0367	-3	-0.3885	0.2824	-0.0480	0.0436	0.0348
-2	-0.3628	0.2870	-0.0337	0.0448	0.0354	-2	-0.3364	0.2802	-0.0411	0.0383	0.0342
-1	-0.3514	0.2870	-0.0155	0.0407	0.0347	-1	-0.2995	0.2780	-0.0362	0.0337	0.0335
0	-0.2948	0.2847	-0.0246	0.0345	0.0347	0	-0.2583	0.2769	-0.0295	0.0290	0.0329
1	-0.2494	0.2812	-0.0245	0.0296	0.0341	1	-0.2236	0.2747	-0.0273	0.0251	0.0326
2	-0.2154	0.2812	-0.0185	0.0248	0.0338	2	-0.1866	0.2725	-0.0256	0.0205	0.0323
3	-0.2041	0.2755	-0.0065	0.0221	0.0331	3	-0.1628	0.2637	-0.0175	0.0172	0.0317
5	-0.1134	0.2640	0.0034	0.0124	0.0315	5	-0.0651	0.2582	-0.0167	0.0053	0.0308
7	-0.0567	0.2457	0.0225	0.0055	0.0296	7	0.0434	0.2560	-0.0113	-0.0079	0.0302
10	0.0907	0.2411	0.0274	0.0565	0.0299	10	0.2170	0.2615	-0.0156	-0.0271	0.0323
20	0.4308	0.3329	-0.0092	-0.0538	0.0418	20	0.5317	0.3626	-0.0448	-0.0673	0.0474
$M = 1.05$											
-3	-0.3885	0.2824	-0.0480	0.0436	0.0348	-3	-0.3885	0.2824	-0.0480	0.0436	0.0348
-2	-0.3364	0.2802	-0.0411	0.0383	0.0342	-2	-0.3364	0.2802	-0.0411	0.0383	0.0342
-1	-0.2995	0.2780	-0.0362	0.0337	0.0335	-1	-0.2995	0.2780	-0.0362	0.0337	0.0335
0	-0.2583	0.2769	-0.0295	0.0290	0.0329	0	-0.2583	0.2769	-0.0295	0.0290	0.0329
1	-0.2236	0.2747	-0.0273	0.0251	0.0326	1	-0.2236	0.2747	-0.0273	0.0251	0.0326
2	-0.1866	0.2725	-0.0256	0.0205	0.0323	2	-0.1866	0.2725	-0.0256	0.0205	0.0323
3	-0.1628	0.2637	-0.0175	0.0172	0.0317	3	-0.1628	0.2637	-0.0175	0.0172	0.0317
5	-0.0651	0.2582	-0.0167	0.0053	0.0308	5	-0.0651	0.2582	-0.0167	0.0053	0.0308
7	0.0434	0.2560	-0.0113	-0.0079	0.0302	7	0.0434	0.2560	-0.0113	-0.0079	0.0302
10	0.2170	0.2615	-0.0156	-0.0271	0.0323	10	0.2170	0.2615	-0.0156	-0.0271	0.0323
20	0.5317	0.3626	-0.0448	-0.0673	0.0474	20	0.5317	0.3626	-0.0448	-0.0673	0.0474
$M = 1.10$											
-3	-0.3814	0.2733	-0.0487	0.0412	0.0334	-3	-0.3814	0.2733	-0.0487	0.0412	0.0334
-2	-0.3335	0.2691	-0.0456	0.0355	0.0322	-2	-0.3335	0.2691	-0.0456	0.0355	0.0322
-1	-0.2897	0.2680	-0.0360	0.0311	0.0313	-1	-0.2897	0.2680	-0.0360	0.0311	0.0313
0	-0.2501	0.2659	-0.0279	0.0260	0.0304	0	-0.2501	0.2659	-0.0279	0.0260	0.0304
1	-0.2084	0.2659	-0.0278	0.0190	0.0304	1	-0.2084	0.2659	-0.0278	0.0190	0.0304
2	-0.1730	0.2638	-0.0261	0.0146	0.0301	2	-0.1730	0.2638	-0.0261	0.0146	0.0301
3	-0.1355	0.2585	-0.0250	0.0095	0.0296	3	-0.1355	0.2585	-0.0250	0.0095	0.0296
5	-0.0542	0.2532	-0.0165	-0.0006	0.0290	5	-0.0542	0.2532	-0.0165	-0.0006	0.0290
7	0.0521	0.2480	-0.0135	-0.0133	0.0284	7	0.0521	0.2480	-0.0135	-0.0133	0.0284
10	0.2084	0.2554	-0.0146	-0.0317	0.0310	10	0.2084	0.2554	-0.0146	-0.0317	0.0310
20	0.5419	0.3693	-0.0557	-0.0748	0.0482	20	0.5419	0.3693	-0.0557	-0.0748	0.0482

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(f) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
M = 0.60											
-3	-0.6326	0.1674	0.0514	0.0717	0.0193	-3	-0.5718	0.2099	0.0282	0.0645	0.0253
-2	-0.5871	0.1570	0.0602	0.0679	0.0188	-2	-0.5027	0.1990	0.0287	0.0580	0.0243
-1	-0.5499	0.1507	0.0665	0.0616	0.0170	-1	-0.4574	0.1869	0.0451	0.0536	0.0220
0	-0.5044	0.1465	0.0706	0.0566	0.0170	0	-0.3979	0.1821	0.0509	0.0471	0.0209
1	-0.4755	0.1465	0.0674	0.0541	0.0164	1	-0.3455	0.1809	0.0503	0.0406	0.0209
2	-0.4300	0.1444	0.0726	0.0490	0.0158	2	-0.2811	0.1749	0.0520	0.0333	0.0199
3	-0.3845	0.1361	0.0757	0.0427	0.0147	3	-0.2549	0.1628	0.0688	0.0290	0.0182
5	-0.2811	0.1256	0.0789	0.0302	0.0129	5	-0.1144	0.1592	0.0743	0.0138	0.0182
7	-0.1447	0.1256	0.0841	0.0126	0.0129	7	0.0262	0.1604	0.0739	-0.0022	0.0186
10	0.0537	0.1382	0.0687	-0.0101	0.0147	10	0.2240	0.1761	0.0699	-0.0268	0.0216
20	0.5747	0.3224	-0.0192	-0.0767	0.0393	20	0.6695	0.3389	-0.0204	-0.0877	0.0446
M = 0.80											
-3	-0.3689	0.1882	-0.0046	0.0762	0.0220	-3	-0.5266	0.2089	0.0073	0.0596	0.0255
-2	-0.5998	0.1782	0.0719	0.0719	0.0204	-2	-0.4491	0.1997	0.0030	0.0506	0.0242
-1	-0.5576	0.1697	0.0810	0.0634	0.0192	-1	-0.3716	0.1939	0.0019	0.0409	0.0233
0	-0.5125	0.1640	0.0895	0.0582	0.0184	0	-0.3123	0.3058	0.0092	0.0347	0.0223
1	-0.4731	0.1582	0.0924	0.0557	0.0180	1	-0.2644	0.1858	0.0111	0.0291	0.0217
2	-0.4280	0.1511	0.0977	0.0505	0.0168	2	-0.1983	0.1835	0.0141	0.0215	0.0207
3	-0.3745	0.1454	0.1026	0.0445	0.0156	3	-0.1391	0.1789	0.0222	0.0139	0.0204
5	-0.2563	0.1340	0.1034	0.0300	0.0144	5	-0.0137	0.1766	0.0289	0.0007	0.0204
7	-0.1155	0.1283	0.1028	0.0154	0.0136	7	0.1049	0.1743	0.0395	-0.0132	0.0204
10	0.1183	0.1426	0.0813	-0.0128	0.0168	10	0.3260	0.2620	0.0250	-0.0395	0.0252
20	0.5801	0.3094	-0.0061	-0.0754	0.0387	20	0.7728	0.3774	-0.0365	-0.1012	0.0508
M = 0.85											
-3	-0.6393	0.1931	0.0635	0.0752	0.0224	-3	-0.5084	0.2088	0.0075	0.0557	0.0241
-2	-0.5893	0.1825	0.0752	0.0688	0.0213	-2	-0.4473	0.1977	0.0043	0.0484	0.0223
-1	-0.5446	0.1745	0.0810	0.0632	0.0198	-1	-0.3666	0.1878	0.0015	0.0391	0.0214
0	-0.5236	0.1678	0.0970	0.0584	0.0190	0	-0.3011	0.1867	0.0051	0.0325	0.0207
1	-0.4604	0.1785	0.0922	0.0552	0.0187	1	-0.2444	0.1823	0.0078	0.0259	0.0204
2	-0.4052	0.1558	0.0983	0.0488	0.0172	2	-0.1876	0.1756	0.0137	0.0192	0.0192
3	-0.3499	0.1519	0.1038	0.0432	0.0160	3	-0.1266	0.1723	0.0195	0.0126	0.0192
5	-0.2368	0.1399	0.1097	0.0280	0.0146	5	0.0022	0.1712	0.0263	-0.0020	0.0192
7	-0.0974	0.1359	0.1121	0.0128	0.0146	7	0.1571	0.1767	0.0221	-0.0186	0.0207
10	0.1368	0.1452	0.0844	-0.0144	0.0175	10	0.3579	0.2077	0.0103	-0.0431	0.0254
20	0.5972	0.3090	-0.0063	-0.0768	0.0388	20	0.8532	0.4165	-0.0553	-0.1081	0.0554
M = 0.90											
-3	-0.6179	0.2018	0.0545	0.0720	0.0237	-3	-0.4923	0.2004	0.0089	0.0554	0.0232
-2	-0.5606	0.1917	0.0638	0.0652	0.0219	-2	-0.4336	0.1898	0.0057	0.0484	0.0217
-1	-0.5058	0.1829	0.0715	0.0598	0.0208	-1	-0.3624	0.1803	0.0041	0.0408	0.0205
0	-0.4659	0.1766	0.0796	0.0538	0.0201	0	-0.2912	0.1761	0.0048	0.0325	0.0199
1	-0.4211	0.1703	0.0823	0.0492	0.0191	1	-0.2346	0.1729	0.0068	0.0268	0.0187
2	-0.3662	0.1652	0.0880	0.0439	0.0184	2	-0.1801	0.1686	0.0113	0.0204	0.0184
3	-0.3065	0.1577	0.0918	0.0371	0.0170	3	-0.1173	0.1676	0.0183	0.0134	0.0181
5	-0.1918	0.1463	0.0983	0.0227	0.0166	5	0.0021	0.1644	0.0258	-0.0006	0.0181
7	-0.0598	0.1438	0.1052	0.0076	0.0163	7	0.1529	0.1707	0.0214	-0.0178	0.0199
10	0.1545	0.1526	0.0871	-0.0174	0.0184	10	0.3498	0.2015	0.0095	-0.0414	0.0244
20	0.6179	0.3166	-0.0113	-0.0795	0.0583	20	0.8400	0.4125	-0.0539	-0.1045	0.0544
M = 1.00											
-3	-0.5266	0.2089	0.0073	0.0596	0.0255	-3	-0.5084	0.2088	0.0075	0.0557	0.0241
-2	-0.4491	0.1997	0.0030	0.0506	0.0242	-2	-0.4473	0.1977	0.0043	0.0484	0.0223
-1	-0.3716	0.1939	0.0019	0.0409	0.0233	-1	-0.3666	0.1878	0.0015	0.0391	0.0214
0	-0.3123	0.3058	0.0092	0.0347	0.0223	0	-0.3011	0.1867	0.0051	0.0325	0.0207
1	-0.2644	0.1858	0.0111	0.0291	0.0217	1	-0.2444	0.1823	0.0078	0.0259	0.0204
2	-0.1983	0.1835	0.0141	0.0215	0.0207	2	-0.1876	0.1756	0.0137	0.0192	0.0192
3	-0.1391	0.1789	0.0222	0.0139	0.0204	3	-0.1266	0.1723	0.0195	0.0126	0.0192
5	-0.0137	0.1766	0.0289	0.0007	0.0204	5	0.0022	0.1712	0.0263	-0.0020	0.0192
7	0.1049	0.1743	0.0395	-0.0132	0.0204	7	0.1571	0.1767	0.0221	-0.0186	0.0207
10	0.3260	0.2620	0.0250	-0.0395	0.0252	10	0.3579	0.2077	0.0103	-0.0431	0.0254
20	0.7728	0.3774	-0.0365	-0.1012	0.0508	20	0.8532	0.4165	-0.0553	-0.1081	0.0554
M = 1.05											
-3	-0.5084	0.2088	0.0075	0.0557	0.0241	-3	-0.5084	0.2088	0.0075	0.0557	0.0241
-2	-0.4473	0.1977	0.0043	0.0484	0.0223	-2	-0.4473	0.1977	0.0043	0.0484	0.0223
-1	-0.3666	0.1878	0.0015	0.0391	0.0214	-1	-0.3666	0.1878	0.0015	0.0391	0.0214
0	-0.3011	0.1867	0.0051	0.0325	0.0207	0	-0.3011	0.1867	0.0051	0.0325	0.0207
1	-0.2444	0.1823	0.0078	0.0259	0.0204	1	-0.2444	0.1823	0.0078	0.0259	0.0204
2	-0.1876	0.1756	0.0137	0.0192	0.0192	2	-0.1876	0.1756	0.0137	0.0192	0.0192
3	-0.1266	0.1723	0.0195	0.0126	0.0192	3	-0.1266	0.1723	0.0195	0.0126	0.0192
5	0.0022	0.1712	0.0263	-0.0020	0.0192	5	0.0022	0.1712	0.0263	-0.0020	0.0192
7	0.1571	0.1767	0.0221	-0.0186	0.0207	7	0.1571	0.1767	0.0221	-0.0186	0.0207
10	0.3579	0.2077	0.0103	-0.0431	0.0254	10	0.3579	0.2077	0.0103	-0.0431	0.0254
20	0.8532	0.4165	-0.0553	-0.1081	0.0554	20	0.8532	0.4165	-0.0553	-0.1081	0.0554
M = 1.10											
-3	-0.4923	0.2004	0.0089	0.0554	0.0232	-3	-0.4923	0.2004	0.0089	0.0554	0.0232
-2	-0.4336	0.1898	0.0057	0.0484	0.0217	-2	-0.4336	0.1898	0.0057	0.0484	0.0217
-1	-0.3624	0.1803	0.0041	0.0408	0.0205	-1	-0.3624	0.1803	0.0041	0.0408	0.0205
0	-0.2912	0.1761	0.0048	0.0325	0.0199	0	-0.2912	0.1761	0.0048	0.0325	0.0199
1	-0.2346	0.1729	0.0068	0.0268	0.0187	1	-0.2346	0.1729	0.0068	0.0268	0.0187
2	-0.1801	0.1686	0.0113	0.0204	0.0184	2	-0.1801	0.1686	0.0113	0.0204	0.0184
3	-0.1173	0.1676	0.0183	0.0134	0.0181	3	-0.1173	0.1676	0.0183	0.0134	0.0181
5	0.0021	0.1644	0.0258	-0.0006	0.0181	5	0.0021	0.1644	0.0258	-0.0006	0.0181
7	0.1529	0.1707	0.0214	-0.0178	0.0199	7	0.1529	0.1707	0.0214	-0.0178	0.0199
10	0.3498	0.2015	0.0095	-0.0414	0.0244	10	0.3498	0.2015	0.0095	-0.0414	0.0244
20	0.8400	0.4125	-0.0539	-0.1045	0.0544	20	0.8400	0.4125	-0.0539	-0.1045	0.0544

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(g) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$										$M = 0.95$	
-3	-0.5944	0.1964	0.0656	0.0728	0.0228	-3	-0.6119	0.2447	0.0561	0.0717	0.0304
-2	-0.5655	0.1901	0.0795	0.0690	0.0222	-2	-0.5500	0.2362	0.0629	0.0652	0.0287
-1	-0.5448	0.1839	0.0793	0.0653	0.0217	-1	-0.4928	0.2302	0.0676	0.0586	0.0273
0	-0.5159	0.1797	0.0320	0.0627	0.0199	0	-0.4500	0.2182	0.0792	0.0536	0.0263
1	-0.4870	0.1776	0.0955	0.0590	0.0205	1	-0.4047	0.2146	0.0817	0.0492	0.0250
2	-0.4499	0.1734	0.0959	0.0540	0.0193	2	-0.3500	0.2061	0.0889	0.0420	0.0240
3	-0.4127	0.1714	0.1054	0.0502	0.0187	3	-0.2833	0.2013	0.0861	0.0340	0.0230
5	-0.3054	0.1609	0.1130	0.0376	0.0164	5	-0.1714	0.1941	0.0998	0.0224	0.0216
7	-0.1981	0.1546	0.1184	0.0251	0.0152	7	-0.0405	0.1880	0.1009	0.0065	0.0213
10	-0.0206	0.1630	0.1111	0.0038	0.0164	10	0.1500	0.2001	0.0883	-0.0174	0.0226
20	0.3591	0.2967	0.0530	-0.0515	0.0328	20	0.4905	0.3227	0.0402	-0.0644	0.0385
$M = 0.80$										$M = 1.00$	
-3	-0.6073	0.2078	0.0639	0.0727	0.0255	-3	-0.5581	0.2457	0.0278	0.0644	0.0300
-2	-0.5595	0.1993	0.0723	0.0675	0.0239	-2	-0.4829	0.2376	0.0272	0.0561	0.0288
-1	-0.5257	0.1936	0.0827	0.0633	0.0227	-1	-0.4260	0.2295	0.0291	0.0499	0.0271
0	-0.4836	0.1893	0.0871	0.0581	0.0219	0	-0.3759	0.2260	0.0379	0.0436	0.0262
1	-0.4470	0.1836	0.0912	0.0539	0.0215	1	-0.3235	0.2226	0.0385	0.0381	0.0255
2	-0.4076	0.1751	0.0995	0.0496	0.0203	2	-0.2665	0.2168	0.0424	0.0312	0.0242
3	-0.3599	0.1722	0.1065	0.0445	0.0195	3	-0.2027	0.2088	0.0511	0.0229	0.0233
5	-0.2502	0.1580	0.1100	0.0316	0.0179	5	-0.0843	0.2053	0.0592	0.0104	0.0229
7	-0.1321	0.1580	0.1169	0.0180	0.0171	7	0.0410	0.2030	0.0632	-0.0035	0.0226
10	0.0647	0.1694	0.1002	-0.0068	0.0187	10	0.2187	0.2203	0.0640	-0.0256	0.0249
20	0.3739	0.2932	0.0601	-0.0513	0.0331	20	0.6060	0.3725	0.0047	-0.0790	0.0446
$M = 0.85$										$M = 1.05$	
-3	-0.6021	0.2143	0.0612	0.0727	0.0261	-3	-0.5451	0.2407	0.0258	0.0623	0.0278
-2	-0.5337	0.2037	0.0652	0.0664	0.0250	-2	-0.4732	0.2296	0.0238	0.0544	0.0263
-1	-0.5180	0.1983	0.0841	0.0624	0.0048	-1	-0.4012	0.2219	0.0281	0.0451	0.0247
0	-0.4733	0.1903	0.0904	0.0568	0.0224	0	-0.3467	0.2175	0.0318	0.0404	0.0241
1	-0.4391	0.1864	0.0943	0.0528	0.0216	1	-0.3096	0.2142	0.0350	0.0351	0.0235
2	-0.3944	0.1810	0.0991	0.0480	0.0209	2	-0.2551	0.2108	0.0406	0.0285	0.0223
3	-0.3365	0.1744	0.1038	0.0424	0.0198	3	-0.1897	0.2020	0.0478	0.0219	0.0213
5	-0.2340	0.1637	0.1135	0.0304	0.0183	5	-0.0632	0.1987	0.0535	0.0073	0.0210
7	-0.1052	0.1624	0.1153	0.0152	0.0179	7	0.0741	0.1998	0.0530	-0.0093	0.0216
10	0.0999	0.1770	0.0964	-0.0112	0.0198	10	0.2682	0.2252	0.0491	-0.0325	0.0257
20	0.3944	0.2995	0.0611	-0.0536	0.0343	20	0.6825	0.3930	-0.0225	-0.0875	0.0489
$M = 0.90$										$M = 1.10$	
-3	-0.6247	0.2256	0.0650	0.0734	0.0279	-3	-0.5382	0.2332	0.0291	0.0611	0.0261
-2	-0.5650	0.2155	0.0735	0.0674	0.0265	-2	-0.4754	0.2205	0.0270	0.0535	0.0246
-1	-0.5227	0.2092	0.0815	0.0621	0.0254	-1	-0.4083	0.2131	0.0269	0.0465	0.0235
0	-0.4754	0.2029	0.0911	0.0568	0.0240	0	-0.3497	0.2089	0.0318	0.0401	0.0226
1	-0.4306	0.1953	0.0928	0.0522	0.0229	1	-0.2974	0.2078	0.0353	0.0387	0.0220
2	-0.3858	0.1890	0.0997	0.0477	0.0219	2	-0.2429	0.2025	0.0396	0.0267	0.0214
3	-0.3211	0.1777	0.1030	0.0401	0.0205	3	-0.1864	0.1972	0.0468	0.0210	0.0208
5	-0.2165	0.1739	0.1141	0.0280	0.0194	5	-0.0628	0.1930	0.0524	0.0070	0.0202
7	-0.0846	0.1676	0.1168	0.0129	0.0187	7	0.0859	0.1961	0.0459	-0.0108	0.0208
10	0.1170	0.1840	0.0927	-0.0129	0.0205	10	0.2618	0.2237	0.0400	-0.0325	0.0246
20	0.4306	0.3138	0.0565	-0.0583	0.0360	20	0.6869	0.3986	-0.0315	-0.0891	0.0493

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(h) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.80$											
-3	-0.5084	0.2197	0.0315	0.0616	0.0246	-3	-0.5573	0.2725	0.0394	0.0630	0.0317
-2	-0.4712	0.2197	0.0387	0.0578	0.0240	-2	-0.5073	0.2653	0.0477	0.0572	0.0311
-1	-0.4381	0.2155	0.0457	0.0540	0.0229	-1	-0.4620	0.2580	0.0553	0.0521	0.0294
0	-0.4133	0.2092	0.0513	0.0503	0.0229	0	-0.4120	0.2472	0.0630	0.0471	0.0277
1	-0.3844	0.2134	0.0536	0.0465	0.0229	1	-0.3739	0.2496	0.0724	0.0427	0.0277
2	-0.3472	0.2092	0.0595	0.0415	0.0217	2	-0.3310	0.2472	0.0765	0.0377	0.0274
3	-0.3182	0.2092	0.0675	0.0390	0.0211	3	-0.2739	0.2399	0.0773	0.0311	0.0267
5	-0.2273	0.2030	0.0788	0.0276	0.0199	5	-0.1453	0.2339	0.0831	0.0196	0.0257
7	-0.1446	0.2030	0.0875	0.0163	0.0193	7	-0.0595	0.2291	0.0977	0.0065	0.0253
10	0.0000	0.2092	0.0915	0.0000	0.0199	10	0.1096	0.2363	0.0853	-0.0152	0.0260
20	0.2810	0.3243	0.0751	-0.0415	0.0334	20	0.4287	0.3557	0.0574	-0.0608	0.0419
$M = 0.95$											
$M = 1.00$											
-3	-0.5067	0.2309	0.0271	0.0599	0.0267	-3	-0.5445	0.2849	0.0255	0.0603	0.0339
-2	-0.4645	0.2266	0.0386	0.0539	0.0255	-2	-0.4852	0.2768	0.0325	0.0533	0.0326
-1	-0.4279	0.2209	0.0419	0.0496	0.0248	-1	-0.4374	0.2710	0.0410	0.0485	0.0313
0	-0.3885	0.2195	0.0522	0.0454	0.0236	0	-0.3873	0.2676	0.0471	0.0429	0.0307
1	-0.3519	0.2166	0.0540	0.0411	0.0240	1	-0.3417	0.1499	0.0490	0.0374	0.0304
2	-0.3097	0.2138	0.0613	0.0368	0.0232	2	-0.2848	0.2607	0.0530	0.0312	0.0291
3	-0.2674	0.2095	0.0680	0.0317	0.0228	3	-0.2278	0.2537	0.0549	0.0242	0.0281
5	-0.1689	0.1995	0.0756	0.0197	0.0212	5	-0.1253	0.2457	0.0653	0.0139	0.0275
7	-0.0704	0.1981	0.0824	0.0077	0.0208	7	-0.0159	0.2422	0.0742	-0.0007	0.0275
10	0.0844	0.2138	0.0762	-0.0103	0.0224	10	0.1549	0.2572	0.0673	-0.0208	0.0294
20	0.3603	0.1867	0.0750	-0.0514	0.0367	20	0.5035	0.3864	0.0309	-0.0686	0.0465
$M = 0.85$											
$M = 1.05$											
-3	-0.5129	0.2343	0.0266	0.0592	0.0272	-3	-0.5233	0.2716	0.0232	0.0577	0.0331
-2	-0.4682	0.2290	0.0381	0.0536	0.0261	-2	-0.4666	0.2661	0.0274	0.0511	0.0315
-1	-0.4261	0.2224	0.0648	0.0488	0.0250	-1	-0.4187	0.2605	0.0344	0.0464	0.0303
0	-0.3814	0.2197	0.0520	0.0440	0.0242	0	-0.3707	0.2583	0.0421	0.0404	0.0294
1	-0.3498	0.2170	0.0534	0.0400	0.0246	1	-0.3227	0.2539	0.0479	0.0351	0.0291
2	-0.3077	0.2130	0.0618	0.0352	0.0235	2	-0.2726	0.2484	0.0482	0.0305	0.0284
3	-0.2578	0.2077	0.0668	0.0296	0.0231	3	-0.2202	0.2429	0.0530	0.0232	0.0275
5	-0.1578	0.2024	0.0754	0.0176	0.0216	5	-0.1112	0.2373	0.0615	0.0113	0.0263
7	-0.0526	0.2011	0.0806	0.0056	0.0213	7	0.0174	0.2362	0.0617	-0.0040	0.0263
10	0.1026	0.1491	0.0771	-0.0128	0.0235	10	0.1941	0.2572	0.0538	-0.0245	0.0294
20	0.3814	0.3329	0.0592	-0.0528	0.0373	20	0.5342	0.3886	0.0151	-0.0729	0.0473
$M = 0.90$											
$M = 1.10$											
-3	-0.5303	0.2433	0.0277	0.0598	0.0282	-3	-0.5233	0.2597	0.0233	0.0579	0.0318
-2	-0.4830	0.2395	0.0357	0.0538	0.0272	-2	-0.4606	0.2533	0.0248	0.0509	0.0303
-1	-0.4357	0.2307	0.0472	0.0492	0.0258	-1	-0.3915	0.2480	0.0287	0.0439	0.0291
0	-0.3909	0.2294	0.0538	0.0447	0.0254	0	-0.3517	0.2448	0.0346	0.0395	0.0282
1	-0.3486	0.2256	0.0596	0.0394	0.0247	1	-0.2973	0.2427	0.0433	0.0325	0.0270
2	-0.3112	0.2244	0.0647	0.0348	0.0244	2	-0.2512	0.2363	0.0449	0.0280	0.0267
3	-0.2614	0.2143	0.0674	0.0288	0.0233	3	-0.1968	0.2310	0.0520	0.0204	0.0255
5	-0.1544	0.2080	0.0772	0.0174	0.0226	5	-0.0984	0.2279	0.0581	0.0089	0.0252
7	-0.0548	0.2067	0.0895	0.0053	0.0222	7	0.0377	0.2279	0.0563	-0.0064	0.0252
10	0.1120	0.2206	0.0735	-0.0144	0.0240	10	0.1989	0.2469	0.0498	-0.0267	0.0285
20	0.4009	0.3403	0.0585	-0.0560	0.0392	20	0.6008	0.4070	-0.0125	-0.0802	0.0502

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(i) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$						$M = 0.95$					
-3	-0.5959	0.1768	0.1224	0.0700	0.0256	-3	-0.6161	0.2243	0.1302	0.0757	0.0309
-2	-0.5342	0.1685	0.1247	0.0637	0.0245	-2	-0.5450	0.2123	0.1348	0.0670	0.0286
-1	-0.4932	0.1664	0.1275	0.0575	0.0227	-1	-0.4858	0.2040	0.1369	0.0605	0.0276
0	-0.4438	0.1644	0.1305	0.0537	0.0221	0	-0.4384	0.1980	0.1394	0.0540	0.0269
1	-0.4110	0.1602	0.1284	0.0487	0.0221	1	-0.3792	0.1944	0.1437	0.0490	0.0259
2	-0.3699	0.1560	0.1312	0.0437	0.0216	2	-0.2962	0.1800	0.1420	0.0382	0.0239
3	-0.3082	0.1560	0.1404	0.0375	0.0204	3	-0.2370	0.1920	0.1528	0.0331	0.0252
5	-0.1973	0.1456	0.1344	0.0237	0.0192	5	-0.0948	0.1884	0.1521	0.0187	0.0249
7	-0.0699	0.1498	0.1345	0.0100	0.0186	7	0.0592	0.1884	0.1400	-0.0007	0.0245
10	0.1233	0.1810	0.1169	-0.0125	0.0216	10	0.2962	0.2171	0.1033	-0.0303	0.0286
20	0.5959	0.3745	0.0004	-0.0800	0.0466	20	0.7583	0.4199	-0.0271	-0.0958	0.0551
$M = 0.80$						$M = 1.00$					
-3	-0.5906	0.1885	0.1186	0.0706	0.0262	-3	-0.6347	0.2410	0.2707	0.0786	0.0328
-2	-0.5374	0.1800	0.1218	0.0647	0.0250	-2	-0.5485	0.2295	0.1384	0.0689	0.0312
-1	-0.4787	0.1715	0.1282	0.0579	0.0238	-1	-0.4873	0.2203	0.1406	0.0620	0.0296
0	-0.4227	0.1701	0.1292	0.0511	0.0234	0	-0.4261	0.2123	0.1477	0.0551	0.0286
1	-0.3835	0.1658	0.1304	0.0460	0.0226	1	-0.3740	0.2066	0.1465	0.0489	0.0273
2	-0.3275	0.1573	0.1352	0.0400	0.0218	2	-0.3015	0.1985	0.1465	0.0400	0.0264
3	-0.2547	0.1545	0.1336	0.0323	0.0210	3	-0.2380	0.1962	0.1519	0.0338	0.0257
5	-0.1260	0.1488	0.1378	0.0179	0.0202	5	-0.0907	0.1962	0.1483	0.0179	0.0254
7	-0.0084	0.1559	0.1360	0.0043	0.0202	7	0.0680	0.2054	0.1321	-0.0014	0.0264
10	0.2239	0.1899	0.1011	-0.0247	0.0250	10	0.3128	0.2352	0.0979	-0.0324	0.0312
20	0.6690	0.3755	-0.0194	-0.0868	0.0488	20	0.7842	0.4498	-0.0135	-0.0979	0.0595
$M = 0.85$						$M = 1.05$					
-3	-0.5888	0.1921	0.1180	0.0700	0.0267	-3	-0.6229	0.2318	0.1476	0.0779	0.0311
-2	-0.5260	0.1828	0.1235	0.0637	0.0256	-2	-0.5448	0.2198	0.1410	0.0680	0.0295
-1	-0.4710	0.1749	0.1295	0.0573	0.0245	-1	-0.4666	0.2110	0.1387	0.0601	0.0283
0	-0.4187	0.1722	0.1318	0.0517	0.0238	0	-0.4124	0.2033	0.1426	0.0528	0.0268
1	-0.3690	0.1656	0.1296	0.0462	0.0226	1	-0.3473	0.1956	0.1387	0.0455	0.0252
2	-0.3140	0.1590	0.1349	0.0398	0.0219	2	-0.2778	0.1901	0.1436	0.0383	0.0246
3	-0.2408	0.1537	0.1350	0.0310	0.0208	3	-0.2062	0.1879	0.1437	0.0304	0.0243
5	-0.1282	0.1524	0.1399	0.0183	0.0204	5	-0.0651	0.1868	0.1372	0.0152	0.0240
7	0.0183	0.1590	0.1386	0.0024	0.0212	7	0.1042	0.1989	0.1167	-0.0053	0.0252
10	0.2460	0.1921	0.0973	-0.0255	0.0252	10	0.3104	0.2362	0.0899	-0.0323	0.0302
20	0.6804	0.3789	-0.0202	-0.0883	0.0497	20	0.7922	0.4692	-0.0016	-0.0977	0.0606
$M = 0.90$						$M = 1.10$					
-3	-0.5946	0.2007	0.1198	0.0723	0.0278	-3	-0.6105	0.2215	0.1495	0.0754	0.0295
-2	-0.5326	0.1906	0.1244	0.0648	0.0263	-2	-0.5417	0.2110	0.1441	0.0684	0.0281
-1	-0.4757	0.1881	0.1336	0.0588	0.0253	-1	-0.4667	0.2004	0.1438	0.0596	0.0263
0	-0.4212	0.1781	0.1330	0.0512	0.0242	0	-0.4021	0.1909	0.1413	0.0526	0.0251
1	-0.3716	0.1718	0.1338	0.0467	0.0235	1	-0.3438	0.1857	0.1405	0.0462	0.0242
2	-0.2973	0.1643	0.1353	0.0377	0.0218	2	-0.2750	0.1814	0.1399	0.0380	0.0236
3	-0.2353	0.1631	0.1398	0.0309	0.0218	3	-0.1979	0.1793	0.1433	0.0298	0.0233
5	-0.1041	0.1631	0.1436	0.0173	0.0218	5	-0.0417	0.1793	0.1260	0.0120	0.0230
7	0.0297	0.1668	0.1365	0.0023	0.0218	7	0.1042	0.1899	0.1082	-0.0057	0.0242
10	0.2700	0.2007	0.1050	-0.0279	0.0263	10	0.3021	0.2268	0.0819	-0.0310	0.0290
20	0.7184	0.3951	-0.0252	-0.0927	0.0516	20	0.7709	0.4536	-0.0043	-0.0950	0.0582

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Concluded

(j) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$										$M = 0.95$	
-3	-0.5248	0.1930	0.0865	0.0636	0.0291	-3	-0.5790	0.2513	0.0983	0.0675	0.0349
-2	-0.4756	0.1889	0.0906	0.0573	0.0273	-2	-0.5081	0.2393	0.0973	0.0589	0.0328
-1	-0.4305	0.1847	0.0969	0.0524	0.0262	-1	-0.4538	0.2273	0.1045	0.0532	0.0315
0	-0.3895	0.1827	0.0974	0.0461	0.0262	0	-0.3900	0.2237	0.1074	0.0467	0.0302
1	-0.3526	0.1827	0.0884	0.0424	0.0256	1	-0.3427	0.2214	0.1078	0.0410	0.0298
2	-0.3034	0.1806	0.1017	0.0374	0.0244	2	-0.2789	0.2118	0.1109	0.0391	0.0285
3	-0.2624	0.1785	0.0976	0.0324	0.0238	3	-0.2080	0.2094	0.1133	0.0259	0.0278
5	-0.1517	0.1723	0.1005	0.0187	0.0233	5	-0.0874	0.2034	0.1166	0.0122	0.0268
7	-0.0410	0.1764	0.1000	0.0062	0.0233	7	0.0473	0.2058	0.1109	-0.0022	0.0271
10	0.1394	0.2055	0.0887	-0.0137	0.0256	10	0.2600	0.2357	0.0825	-0.0295	0.0315
20	0.5822	0.3944	-0.0237	-0.0798	0.0494	20	0.7374	0.4307	-0.0467	-0.0963	0.0576
$M = 0.80$										$M = 1.00$	
-3	-0.5447	0.2107	0.0880	0.0646	0.0301	-3	-0.5993	0.2690	0.1057	0.0694	0.0372
-2	-0.4861	0.2022	0.0905	0.0586	0.0289	-2	-0.5178	0.2599	0.1032	0.0605	0.0359
-1	-0.4330	0.1952	0.0958	0.0518	0.0273	-1	-0.4523	0.2519	0.1060	0.0529	0.0343
0	-0.3743	0.1923	0.0991	0.0459	0.0269	0	-0.3889	0.2461	0.1099	0.0461	0.0334
1	-0.3380	0.1909	0.0978	0.0408	0.0265	1	-0.3437	0.2427	0.1133	0.0413	0.0327
2	-0.2794	0.1881	0.1026	0.0348	0.0257	2	-0.2714	0.2313	0.1132	0.0323	0.0311
3	-0.2151	0.1810	0.1021	0.0272	0.0246	3	-0.2148	0.2290	0.1170	0.0268	0.0305
5	-0.0978	0.1768	0.1096	0.0136	0.0238	5	-0.0905	0.2175	0.1190	0.0131	0.0292
7	0.0223	0.1796	0.1070	0.0008	0.0238	7	0.0475	0.2290	0.1115	-0.0034	0.0305
10	0.2179	0.2121	0.0786	-0.0229	0.0281	10	0.2714	0.2587	0.0801	-0.0309	0.0346
20	0.6425	0.3960	-0.0317	-0.0841	0.0515	20	0.7915	0.4751	-0.0304	-0.1024	0.0635
$M = 0.85$										$M = 1.05$	
-3	-0.5535	0.2168	0.0892	0.0659	0.0307	-3	-0.5890	0.2609	0.1080	0.0691	0.0365
-2	-0.4908	0.2062	0.0908	0.0587	0.0292	-2	-0.5153	0.2521	0.1036	0.0593	0.0350
-1	-0.4308	0.2009	0.0976	0.0524	0.0281	-1	-0.4331	0.2412	0.1015	0.0514	0.0338
0	-0.3812	0.1969	0.1004	0.0468	0.0274	0	-0.3789	0.2379	0.1098	0.0454	0.0322
1	-0.3290	0.1943	0.1048	0.0413	0.0267	1	-0.3270	0.2335	0.1080	0.0395	0.0313
2	-0.2794	0.1903	0.1046	0.0341	0.0259	2	-0.2598	0.2247	0.1144	0.0309	0.0301
3	-0.2089	0.1824	0.1016	0.0254	0.0252	3	-0.1927	0.2203	0.1148	0.0244	0.0298
5	-0.0862	0.1811	0.1096	0.0127	0.0241	5	-0.0650	0.2203	0.1125	0.0099	0.0295
7	0.0366	0.1850	0.1051	-0.0008	0.0248	7	0.0693	0.2291	0.1018	-0.0053	0.0301
10	0.2271	0.2141	0.0794	-0.0254	0.0285	10	0.2880	0.2631	0.0709	-0.0336	0.0347
20	0.6736	0.4031	-0.0393	-0.0881	0.0529	20	0.7708	0.4878	-0.0229	-0.1001	0.0639
$M = 0.90$										$M = 1.10$	
-3	-0.5635	0.2290	0.0912	0.0661	0.0319	-3	-0.5899	0.2517	0.1123	0.0666	0.0508
-2	-0.4943	0.2190	0.0922	0.0586	0.0305	-2	-0.5162	0.2421	0.1075	0.0577	0.0344
-1	-0.4424	0.2102	0.0997	0.0519	0.0291	-1	-0.4424	0.2347	0.1057	0.0493	0.0329
0	-0.3831	0.2040	0.1027	0.0466	0.0280	0	-0.3687	0.2261	0.1069	0.0410	0.0314
1	-0.3337	0.2002	0.0998	0.0398	0.0277	1	-0.3160	0.2240	0.1104	0.0352	0.0305
2	-0.2743	0.1977	0.1048	0.0338	0.0266	2	-0.2444	0.2133	0.1099	0.0269	0.0299
3	-0.2076	0.1914	0.1060	0.0256	0.0259	3	-0.1896	0.2112	0.1111	0.0205	0.0290
5	-0.0915	0.1877	0.1120	0.0128	0.0252	5	-0.0632	0.2133	0.1083	0.0064	0.0284
7	0.0470	0.1902	0.1042	-0.0015	0.0256	7	0.0948	0.2240	0.0905	-0.0122	0.0290
10	0.2422	0.2252	0.0861	-0.0271	0.0298	10	0.2907	0.2560	0.0646	-0.0372	0.0338
20	0.7044	0.4129	-0.0439	-0.0924	0.0547	20	0.7585	0.4800	-0.0218	-0.1012	0.0618

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TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING

(a) Plain Wing

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$											
$M = 0.95$											
-3	-0.2129	.0056	-0.0086	.0247	.0013	-3	-0.2837	.0210	-0.0020	.0317	.0029
-2	-0.1466	.0042	-0.0059	.0174	.0010	-2	-0.2072	.0113	-0.0016	.0207	.0018
-1	-0.0774	.0028	.0007	.0090	.0005	-1	-0.0924	.0065	-0.0014	.0100	.0015
0	-0.0194	.0014	.0049	.0022	.0005	0	-0.0048	.0065	.0008	-0.0006	.0015
1	.0442	.0028	.0014	-0.0056	.0005	1	.1004	.0073	.0039	-0.0126	.0018
2	.1079	.0042	.0070	-0.0135	.0010	2	.1833	.0121	.0076	-0.0223	.0026
3	.1742	.0098	.0121	-0.0219	.0016	3	.2725	.0202	.0052	-0.0333	.0036
5	.3097	.0252	.0199	-0.0376	.0034	5	.4382	.0468	-0.0160	-0.0539	.0077
7	.4480	.0504	.0265	-0.0549	.0073	7	.6088	.0855	-0.0490	-0.0753	.0137
10	.6333	.1134	-0.0061	-0.0807	.0167	10	.8223	.1525	-0.0785	-0.1014	.0238
20	.7577	.3052	-0.0888	-0.0998	.0413	20	1.0040	.3856	-0.1463	-0.1273	.0530
$M = 0.80$											
$M = 1.00$											
-3	-0.2486	.0105	-0.0147	.0283	.0021	-3	-0.2820	.0293	.0188	.0321	.0039
-2	-0.1695	.0048	-0.0088	.0187	.0012	-2	-0.1799	.0201	.0110	.0201	.0027
-1	-0.0848	.0010	-0.0062	.0099	.0009	-1	-0.0899	.0139	.0055	.0096	.0022
0	-0.0151	.0000	-0.0015	.0015	.0007	0	.0030	.0139	.0026	-0.0009	.0022
1	.0546	.0019	.0075	-0.0073	.0011	1	.1021	.0154	-0.0004	-0.0127	.0026
2	.1281	.0057	.0128	-0.0160	.0016	2	.1875	.0201	-0.0052	-0.0232	.0035
3	.2185	.0124	.0190	-0.0263	.0021	3	.2728	.0293	-0.0109	-0.0340	.0048
5	.3786	.0296	.0315	-0.0454	.0048	5	.4207	.0525	-0.0266	-0.0507	.0082
7	.5406	.0601	.0274	-0.0657	.0098	7	.5670	.0849	-0.0487	-0.0689	.0133
10	.7120	.1211	.0091	-0.0894	.0182	10	.7835	.1528	-0.0886	-0.0961	.0229
20	.7949	.3128	-0.0970	-0.1020	.0426						
$M = 0.85$											
$M = 1.05$											
-3	-0.2657	.0125	-0.0157	.0293	.0022	-3	-0.2597	.0397	.0105	.0294	.0032
-2	-0.1725	.0062	-0.0119	.0186	.0015	-2	-0.1813	.0309	.0026	.0203	.0023
-1	-0.0862	.0018	-0.0080	.0086	.0010	-1	-0.1045	.0264	.0002	.0118	.0018
0	-0.0106	.0000	.0002	.0000	.0008	0	-0.0290	.0235	.0004	.0029	.0015
1	.0686	.0036	.0100	-0.0093	.0012	1	.0464	.0250	.0017	-0.0056	.0018
2	.1426	.0071	.0209	-0.0186	.0017	2	.1306	.0286	.0017	-0.0159	.0023
3	.3273	.0125	.0018	-0.0296	.0025	3	.1988	.0345	-0.0014	-0.0235	.0032
5	.4171	.0339	.0239	-0.0507	.0060	5	.3264	.0521	-0.0175	-0.0385	.0058
7	.5667	.0668	.0149	-0.0696	.0111	7	.4700	.0779	-0.0395	-0.0556	.0097
10	.7409	.1292	-0.0010	-0.0931	.0196	10	.6789	.1373	-0.0753	-0.0818	.0182
20	.8254	.3252	-0.1055	-0.1056	.0441						
$M = 0.90$											
$M = 1.10$											
-3	-0.2832	.0169	-0.0153	.0314	.0024	-3	-0.2689	.0409	.0173	.0305	.0032
-2	-0.1799	.0067	-0.0165	.0196	.0016	-2	-0.1909	.0324	.0110	.0215	.0021
-1	-0.0850	.0025	-0.0068	.0084	.0011	-1	-0.1073	.0261	.0051	.0119	.0014
0	-0.0017	.0025	.0013	-0.0014	.0011	0	-0.0237	.0226	.0032	.0025	.0014
1	.0800	.0034	.0122	-0.0111	.0013	1	.0543	.0254	.0003	-0.0068	.0017
2	.1583	.0067	.0218	-0.0196	.0019	2	.1254	.0282	-0.0023	-0.0150	.0021
3	.2582	.0152	.0248	-0.0317	.0030	3	.2048	.0346	-0.0087	-0.0246	.0032
5	.4348	.0388	.0083	-0.0530	.0066	5	.3288	.0515	-0.0191	-0.0390	.0057
7	.6148	.0784	-0.0175	-0.0756	.0126	7	.6506	.1319	-0.0719	-0.0785	.0171
10	.7864	.1417	-0.0344	-0.1003	.0219						
20	.8897	.3441	-0.0730	-0.1121	.0468						

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TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(b) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$											
-3	-0.4451	0.1750	-0.0683	0.0538	0.0254	-3	-0.5020	0.2558	-0.0675	0.0607	0.0334
-2	-0.4423	0.1764	-0.0658	0.0527	0.0251	-2	-0.4621	0.2477	-0.0695	0.0543	0.0324
-1	-0.4285	0.1820	-0.0622	0.0510	0.0251	-1	-0.4303	0.2396	-0.0621	0.0510	0.0312
0	-0.4147	0.1820	-0.0548	0.0476	0.0254	0	-0.3586	0.2420	-0.0641	0.0423	0.0312
1	-0.3870	0.1889	-0.0472	0.0454	0.0254	1	-0.2868	0.2437	-0.1197	0.0333	0.0319
2	-0.3677	0.1876	-0.0528	0.0409	0.0251	2	-0.3028	0.2356	-0.0623	0.0355	0.0304
3	-0.3318	0.1862	-0.0534	0.0364	0.0251	3	-0.2550	0.2340	-0.0664	0.0300	0.0304
5	-0.1465	0.1889	-0.0712	0.0118	0.0248	5	-0.2072	0.2299	-0.0671	0.0220	0.0294
7	-0.0193	0.1988	-0.0820	-0.0095	0.0254	7	-0.1195	0.2219	-0.0774	0.0116	0.0286
10	-0.4921	0.3079	-0.0805	-0.0701	0.0408	10	-0.0797	0.2178	-0.0893	-0.0145	0.0285
$M = 0.80$											
-3	-0.4708	0.2002	-0.0574	0.0584	0.0280	-3	-0.3963	0.2547	-0.0854	0.0460	0.0333
-2	-0.4689	0.2002	-0.0549	0.0576	0.0274	-2	-0.3430	0.2469	-0.0954	0.0399	0.0321
-1	-0.4576	0.1992	-0.0496	0.0561	0.0271	-1	-0.2896	0.2415	-0.0949	0.0318	0.0313
0	-0.4331	0.2002	-0.0444	0.0527	0.0271	0	-0.2134	0.2400	-0.0967	0.0256	0.0311
1	-0.4143	0.2002	-0.0395	0.0496	0.0271	1	-0.1722	0.2431	-0.0988	0.0198	0.0385
2	-0.3954	0.2002	-0.0372	0.0470	0.0269	2	-0.1601	0.2408	-0.0921	0.0170	0.0316
3	-0.3785	0.2002	-0.0335	0.0443	0.0265	3	-0.1524	0.2369	-0.0900	0.0167	0.0310
5	-0.3145	0.1954	-0.0366	0.0355	0.0258	5	-0.0610	0.2392	-0.1047	0.0000	0.0313
7	-0.2071	0.1954	-0.0473	0.0214	0.0255	7	-0.0381	0.2408	-0.1114	-0.0077	0.0317
10	-0.0264	0.1907	-0.0727	-0.0095	0.0255	10	-0.1982	0.2292	-0.1121	-0.0275	0.0304
20	-0.5367	0.3070	-0.1076	-0.0733	0.0418	20	-0.7469	0.3704	-0.1680	-0.0949	0.0496
$M = 0.85$											
-3	-0.4785	0.2138	-0.0598	0.0599	0.0289	-3	-0.3649	0.2438	-0.0857	0.0426	0.0312
-2	-0.4750	0.2066	-0.0542	0.0585	0.0283	-2	-0.3094	0.2350	-0.0957	0.0364	0.0299
-1	-0.4574	0.2066	-0.0496	0.0567	0.0279	-1	-0.2481	0.2291	-0.0983	0.0293	0.0291
0	-0.4398	0.2093	-0.0401	0.0539	0.0278	0	-0.1970	0.2291	-0.0956	0.0231	0.0290
1	-0.4222	0.2093	-0.0381	0.0335	0.0278	1	-0.1606	0.2328	-0.0968	0.0183	0.0293
2	-0.4134	0.2093	-0.0319	0.0496	0.0276	2	-0.1168	0.2350	-0.1007	0.0124	0.0295
3	-0.3906	0.2049	-0.0277	0.0460	0.0269	3	-0.1460	0.2365	-0.0850	0.0068	0.0299
5	-0.3343	0.2022	-0.0313	0.0378	0.0264	5	-0.0219	0.2387	-0.1189	-0.0050	0.0299
7	-0.2217	0.1968	-0.0484	0.0232	0.0259	7	-0.1124	0.2438	-0.1276	-0.0160	0.0309
10	-0.0299	0.1942	-0.0709	-0.0093	0.0256	10	-0.3050	0.2490	-0.1369	-0.0399	0.0320
20	-0.5718	0.3162	-0.1195	-0.0767	0.0429	20	-0.7736	0.3621	-0.1780	-0.0967	0.0486
$M = 0.90$											
-3	-0.5165	0.2319	-0.0661	0.0652	0.0312	-3	-0.3503	0.2341	-0.0811	0.0412	0.0293
-2	-0.5448	0.2362	-0.0566	0.0659	0.0315	-2	-0.2985	0.2256	-0.0919	0.0349	0.0281
-1	-0.4998	0.2319	-0.0512	0.0608	0.0306	-1	-0.2480	0.2199	-0.0957	0.0290	0.0274
0	-0.4715	0.2311	-0.0429	0.0567	0.0301	0	-0.1892	0.2199	-0.0918	0.0222	0.0266
1	-0.4498	0.2286	-0.0410	0.0544	0.0299	1	-0.1541	0.2235	-0.0946	0.0173	0.0268
2	-0.4165	0.2235	-0.0386	0.0507	0.0293	2	-0.1121	0.2270	-0.0967	0.0116	0.0270
3	-0.3832	0.2235	-0.0377	0.0449	0.0288	3	-0.0631	0.2270	-0.1012	0.0060	0.0273
5	-0.2949	0.2168	-0.0469	0.0331	0.0282	5	-0.0140	0.2306	-0.1124	-0.0045	0.0277
7	-0.1999	0.2083	-0.0522	0.0213	0.0268	7	-0.1093	0.2355	-0.1217	-0.0159	0.0286
10	-0.0333	0.1999	-0.0737	-0.0091	0.0260	10	-0.2802	0.2412	-0.1316	-0.0375	0.0297
20	-0.6048	0.3247	-0.1317	-0.0800	0.0436	20	-0.7707	0.3015	-0.1728	-0.0815	0.0427
$M = 1.00$											
-3	-0.3963	0.2547	-0.0854	0.0460	0.0333	-3	-0.3649	0.2438	-0.0857	0.0426	0.0312
-2	-0.3430	0.2469	-0.0954	0.0399	0.0321	-2	-0.3094	0.2350	-0.0957	0.0364	0.0299
-1	-0.2896	0.2415	-0.0949	0.0318	0.0313	-1	-0.2481	0.2291	-0.0983	0.0293	0.0291
0	-0.2134	0.2400	-0.0967	0.0256	0.0311	0	-0.1970	0.2291	-0.0956	0.0231	0.0290
1	-0.1722	0.2431	-0.0988	0.0198	0.0385	1	-0.1606	0.2328	-0.0968	0.0183	0.0293
2	-0.1601	0.2408	-0.0921	0.0170	0.0316	2	-0.1168	0.2350	-0.1007	0.0124	0.0295
3	-0.1524	0.2369	-0.0900	0.0167	0.0310	3	-0.1460	0.2365	-0.0850	0.0068	0.0299
5	-0.0610	0.2392	-0.1047	0.0000	0.0313	5	-0.0219	0.2387	-0.1189	-0.0050	0.0299
7	-0.0381	0.2408	-0.1114	-0.0077	0.0317	7	-0.1124	0.2438	-0.1276	-0.0160	0.0309
10	-0.1982	0.2292	-0.1121	-0.0275	0.0304	10	-0.3050	0.2490	-0.1369	-0.0399	0.0320
20	-0.7469	0.3704	-0.1680	-0.0949	0.0496	20	-0.7736	0.3621	-0.1780	-0.0967	0.0486
$M = 1.05$											
-3	-0.3649	0.2438	-0.0857	0.0426	0.0312	-3	-0.3649	0.2438	-0.0857	0.0426	0.0312
-2	-0.3094	0.2350	-0.0957	0.0364	0.0299	-2	-0.3094	0.2350	-0.0957	0.0364	0.0299
-1	-0.2481	0.2291	-0.0983	0.0293	0.0291	-1	-0.2481	0.2291	-0.0983	0.0293	0.0291
0	-0.1970	0.2291	-0.0956	0.0231	0.0290	0	-0.1970	0.2291	-0.0956	0.0231	0.0290
1	-0.1606	0.2328	-0.0968	0.0183	0.0293	1	-0.1606	0.2328	-0.0968	0.0183	0.0293
2	-0.1168	0.2350	-0.1007	0.0124	0.0295	2	-0.1168	0.2350	-0.1007	0.0124	0.0295
3	-0.1460	0.2365	-0.0850	0.0068	0.0299	3	-0.1460	0.2365	-0.0850	0.0068	0.0299
5	-0.0219	0.2387	-0.1189	-0.0050	0.0299	5	-0.0219	0.2387	-0.1189	-0.0050	0.0299
7	-0.1124	0.2438	-0.1276	-0.0160	0.0309	7	-0.1124	0.2438	-0.1276	-0.0160	0.0309
10	-0.3050	0.2490	-0.1369	-0.0399	0.0320	10	-0.3050	0.2490	-0.1369	-0.0399	0.0320
20	-0.7736	0.3621	-0.1780	-0.0967	0.0486	20	-0.7736	0.3621	-0.1780	-0.0967	0.0486
$M = 1.10$											
-3	-0.3503	0.2341	-0.0811	0.0412	0.0293	-3	-0.3503	0.2341	-0.0811	0.0412	0.0293
-2	-0.2985	0.2256	-0.0919	0.0349	0.0281	-2	-0.2985	0.2256	-0.0919	0.0349	0.0281
-1	-0.2480	0.2199	-0.0957	0.0290	0.0274	-1	-0.2480	0.2199	-0.0957	0.0290	0.0274
0	-0.1892	0.2199	-0.0918	0.0222	0.0266	0	-0.1892	0.2199	-0.0918	0.0222	0.0266
1	-0.1541	0.2235	-0.0946	0.0173	0.0268	1	-0.1541	0.2235	-0.0946	0.0173	0.0268
2	-0.1121	0.2270	-0.0967	0.0116	0.0270	2	-0.1121	0.2270	-0.0967	0.0116	0.0270
3	-0.0631	0.2270	-0.1012	0.0060	0.0273	3	-0.0631	0.2270	-0.1012	0.0060	0.0273
5	-0.0140	0.2306	-0.1124	-0.0045	0.0277	5	-0.0140	0.2306	-0.1124	-0.0045	0.0277
7	-0.1093	0.2355	-0.1217	-0.0159	0.0286	7	-0.1093	0.2355	-0.1217	-0.0159	0.0286
10	-0.2802	0.2412	-0.1316	-0.0375	0.0297	10	-0.2802	0.2412	-0.1316	-0.0375	0.0297
20	-0.7707	0.3015	-0.1728	-0.0815	0.0427	20	-0.7707	0.3015	-0.1728	-0.0815	0.0427

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TABLE III.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(c) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α_s deg	c_L	c_D	c_M	c_l	c_n	α_s deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$						$M = 0.95$					
-3	-0.6411	0.2034	-0.0188	0.0786	0.0268	-3	-0.6517	0.2777	-0.0337	0.0791	0.0330
-2	-0.6081	0.2034	-0.0018	0.0747	0.0263	-2	-0.5359	0.2633	-0.0514	0.0701	0.0318
-1	-0.5723	0.1950	0.0085	0.0697	0.0255	-1	-0.4963	0.2513	-0.0345	0.0604	0.0307
0	-0.5531	0.1950	0.0152	0.0667	0.0250	0	-0.4804	0.2472	-0.0205	0.0572	0.0303
1	-0.5255	0.1950	0.0197	0.0630	0.0247	1	-0.3932	0.2432	-0.0172	0.0482	0.0295
2	-0.4898	0.1895	0.0268	0.0591	0.0239	2	-0.3615	0.2352	-0.0058	0.0437	0.0288
3	-0.4623	0.1867	0.0337	0.0547	0.0234	3	-0.3139	0.2312	-0.0022	0.0389	0.0280
5	-0.3880	0.1755	0.0382	0.0441	0.0224	5	-0.2426	0.2135	0.0167	0.0299	0.0256
7	-0.2807	0.1727	0.0359	0.0307	0.0213	7	-0.1157	0.2031	0.0269	0.0148	0.0241
10	-0.0468	0.1644	0.0329	0.0017	0.0208	10	0.1221	0.1975	0.0247	-0.0141	0.0246
20	0.4045	0.2870	-0.0302	-0.0569	0.0364	20	0.3235	0.2312	0.0013	-0.0415	0.0300
$M = 0.80$						$M = 1.00$					
-3	-0.6428	0.2258	-0.0200	0.0783	0.0285	-3	-0.5426	0.2732	-0.0724	0.0630	0.0335
-2	-0.6016	0.2201	-0.0082	0.0733	0.0275	-2	-0.4820	0.2609	-0.0723	0.0562	0.0317
-1	-0.5585	0.2144	0.0058	0.0684	0.0266	-1	-0.4138	0.2501	-0.0689	0.0492	0.0307
0	-0.5360	0.2106	0.0087	0.0657	0.0262	0	-0.3456	0.2478	-0.0709	0.0402	0.0302
1	-0.4892	0.2069	0.0208	0.0600	0.0257	1	-0.2774	0.2471	-0.0607	0.0320	0.0302
2	-0.4610	0.2021	0.0311	0.0562	0.0248	2	-0.2319	0.2478	-0.0520	0.0264	0.0299
3	-0.4367	0.1974	0.0398	0.0528	0.0243	3	-0.1985	0.2440	-0.0443	0.0215	0.0295
5	-0.3711	0.1879	0.0511	0.0448	0.0230	5	-0.1334	0.2287	-0.0231	0.0154	0.0279
7	-0.2661	0.1736	0.0581	0.0308	0.0216	7	0.0637	0.2287	-0.0330	-0.0046	0.0274
10	-0.0206	0.1689	0.0523	0.0000	0.0211	10	0.2228	0.2248	-0.0206	-0.0270	0.0285
20	0.4348	0.2875	-0.0271	-0.0585	0.0372	20	0.5865	0.3284	-0.0659	-0.0737	0.0433
$M = 0.85$						$M = 1.05$					
-3	-0.6794	0.2420	-0.0162	0.0827	0.0303	-3	-0.5230	0.2662	-0.0687	0.0604	0.0323
-2	-0.6163	0.2269	-0.0086	0.0749	0.0286	-2	-0.4692	0.2545	-0.0691	0.0539	0.0308
-1	-0.5621	0.2198	0.0044	0.0685	0.0273	-1	-0.3966	0.3148	-0.0738	0.0456	0.0294
0	-0.5358	0.2181	0.0091	0.0660	0.0271	0	-0.3210	0.2398	-0.0668	0.0368	0.0290
1	-0.4868	0.2110	0.0268	0.0600	0.0260	1	-0.2702	0.2412	-0.0038	0.0309	0.0288
2	-0.4605	0.2092	0.0349	0.0564	0.0257	2	-0.2194	0.2383	-0.0003	0.0250	0.0287
3	-0.4395	0.2065	0.0453	0.0536	0.0252	3	-0.1758	0.2346	-0.0047	0.0197	0.0283
5	-0.3730	0.1941	0.0593	0.0451	0.0235	5	-0.0697	0.2287	-0.0160	0.0074	0.0275
7	-0.2592	0.1800	0.0657	0.0305	0.0222	7	0.0755	0.2214	-0.0303	-0.0097	0.0268
10	-0.0017	0.1711	0.0567	-0.0007	0.0215	10	0.2978	0.2302	-0.0577	-0.0362	0.0290
20	0.4640	0.2934	-0.0313	-0.0607	0.0381	20	0.5695	0.2639	-0.1075	-0.0515	0.0328
$M = 0.90$						$M = 1.10$					
-3	-0.7064	0.2569	-0.0145	0.0847	0.0321	-3	-0.5022	0.2529	0.0331	0.0591	0.0311
-2	-0.6517	0.2502	-0.0043	0.0790	0.0310	-2	-0.4506	0.2408	0.0234	0.0526	0.0295
-1	-0.5953	0.2443	0.0084	0.0726	0.0301	-1	-0.3809	0.2303	0.0115	0.0450	0.0282
0	-0.5688	0.2401	0.0133	0.0692	0.0298	0	-0.3111	0.2281	0.0052	0.0373	0.0276
1	-0.5024	0.2334	0.0272	0.0612	0.0287	1	-0.5343	0.1575	0.0728	0.0305	0.0274
2	-0.4776	0.2275	0.0361	0.0585	0.0276	2	-0.2065	0.2281	-0.0015	0.0246	0.0272
3	-0.4361	0.2208	0.0420	0.0531	0.0267	3	-0.1576	0.2246	-0.0069	0.0187	0.0269
5	-0.3449	0.2040	0.0495	0.0424	0.0248	5	-0.0600	0.2175	-0.0167	0.0068	0.0259
7	-0.2122	0.1872	0.0540	0.0259	0.0229	7	0.0795	0.2126	-0.0297	-0.0105	0.0253
10	0.0365	0.1813	0.0513	-0.0044	0.0224	10	0.2860	0.2232	-0.0555	-0.0348	0.0276
20	0.2603	0.2208	0.0164	-0.0366	0.0287						

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TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(d) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$					
-2	-0.6333	0.1924	0.0629	0.0781	0.0238
-1	-0.5865	0.1868	0.0688	0.0726	0.0230
0	-0.5397	0.1840	0.0764	0.0675	0.0223
1	-0.5094	0.1826	0.0826	0.0636	0.0220
2	-0.4708	0.1812	0.0890	0.0586	0.0213
3	-0.4295	0.1756	0.0949	0.0536	0.0210
5	-0.3194	0.1645	0.1059	0.0402	0.0193
7	-0.1955	0.1575	0.1184	0.0251	0.0181
10	0.0220	0.1715	0.1143	-0.0006	0.0199
20	0.3497	0.2941	0.0560	-0.0474	0.0346
$M = 0.80$					
-3	-0.7092	0.2166	0.0429	0.0852	0.0268
-2	-0.6341	0.2071	0.0511	0.0768	0.0255
-1	-0.5741	0.1976	0.0620	0.0704	0.0243
0	-0.5215	0.1957	0.0748	0.0639	0.0231
1	-0.4690	0.1900	0.0781	0.0586	0.0231
2	-0.4259	0.1843	0.0870	0.0536	0.0223
3	-0.3658	0.1805	0.0952	0.0468	0.0216
5	-0.2345	0.1691	0.1056	0.0308	0.0202
7	-0.0901	0.1653	0.1103	0.0137	0.0197
10	0.1351	0.1833	0.0962	-0.0141	0.0223
20	0.3752	0.2925	0.0716	-0.0494	0.0355
$M = 0.85$					
-3	-0.7241	0.2246	0.0474	0.0874	0.0278
-2	-0.6400	0.2113	0.0504	0.0775	0.0264
-1	-0.5716	0.2068	0.0668	0.0697	0.0250
0	-0.5172	0.1979	0.0758	0.0636	0.0242
1	-0.4664	0.1935	0.0815	0.0579	0.0239
2	-0.4138	0.1873	0.0910	0.0522	0.0240
3	-0.3402	0.1820	0.0967	0.0444	0.0220
5	-0.2244	0.1731	0.1114	0.0302	0.0209
7	-0.0491	0.1713	0.1110	0.0089	0.0206
10	0.1560	0.1917	0.0980	-0.0167	0.0235
20	0.4857	0.3000	0.0505	-0.0515	0.0370
$M = 0.90$					
-3	-0.7685	0.2420	0.0614	0.0925	0.0304
-2	-0.6606	0.2252	0.0588	0.0804	0.0281
-1	-0.5826	0.2126	0.0680	0.0713	0.0265
0	-0.5278	0.2084	0.0833	0.0649	0.0257
1	-0.4747	0.2059	0.0886	0.0599	0.0257
2	-0.4199	0.2000	0.1004	0.0532	0.0250
3	-0.3535	0.1958	0.1071	0.0461	0.0240
5	-0.2241	0.1874	0.1246	0.0313	0.0231
7	-0.0349	0.1773	0.1157	0.0071	0.0217
10	0.1643	0.1941	0.0992	-0.0178	0.0242
20	0.4382	0.3134	0.0658	-0.0562	0.0391

α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.95$					
-3	-0.7748	0.3038	0.0637	0.0917	0.0336
-2	-0.6716	0.2476	0.0536	0.0795	0.0317
-1	-0.5843	0.2395	0.0569	0.0702	0.0303
0	-0.5049	0.2315	0.0694	0.0628	0.0293
1	-0.4462	0.2275	0.0670	0.0531	0.0293
2	-0.4017	0.2154	0.0927	0.0486	0.0272
3	-0.3223	0.2074	0.0942	0.0412	0.0260
5	-0.1858	0.1993	0.1095	0.0248	0.0251
7	0.0032	0.1953	0.1051	0.0032	0.0245
10	0.2096	0.2114	0.0933	-0.0232	0.0269
20	0.4954	0.3280	0.0514	-0.0628	0.0261
$M = 1.00$					
-3	-0.6968	0.2644	0.0327	0.0828	0.0336
-2	-0.6194	0.2483	0.0283	0.0732	0.0319
-1	-0.5435	0.2390	0.0299	0.0646	0.0303
0	-0.4448	0.2329	0.0335	0.0529	0.0294
1	-0.3811	0.2290	0.0421	0.0462	0.0286
2	-0.3158	0.2221	0.0498	0.0391	0.0278
3	-0.2399	0.2137	0.0529	0.0302	0.0267
5	-0.0956	0.2068	0.0664	0.0138	0.0260
7	0.1017	0.2091	0.0644	-0.0098	0.0261
10	0.3294	0.2367	0.0576	-0.0382	0.0306
20	0.5496	0.3443	0.0330	-0.0692	0.0436
$M = 1.05$					
-3	-0.6743	0.2560	0.0358	0.0789	0.0161
-2	-0.6002	0.2376	0.0310	0.0701	0.0152
-1	-0.5202	0.2266	0.0302	0.0616	0.0145
0	-0.4476	0.2200	0.0335	0.0530	0.0139
1	-0.3604	0.2156	0.0351	0.0436	0.0137
2	-0.2950	0.2119	0.0443	0.0362	0.0133
3	-0.2165	0.2030	0.0498	0.0274	0.0127
5	-0.0770	0.1986	0.0612	0.0109	0.0123
7	0.1337	0.2030	0.0541	-0.0144	0.0126
10	0.3502	0.2340	0.0426	-0.0407	0.0149
20	0.4461	0.2965	0.0462	-0.0560	0.0181
$M = 1.10$					
-3	-0.6403	0.2423	0.0371	0.0755	0.0306
-2	-0.5901	0.2303	0.0351	0.0693	0.0290
-1	-0.5064	0.2175	0.0288	0.0602	0.0276
0	-0.4227	0.2084	0.0304	0.0509	0.0262
1	-0.3320	0.2062	0.0368	0.0402	0.0256
2	-0.2693	0.1999	0.0430	0.0328	0.0248
3	-0.2135	0.1949	0.0476	0.0263	0.0240
5	-0.0502	0.1822	0.0569	0.0071	0.0229
7	0.1284	0.1949	0.0527	-0.0141	0.0239
10	0.3446	0.2246	0.0373	-0.0404	0.0286
20	0.4143	0.2740	0.0459	-0.0495	0.0335

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TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Concluded

(e) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$						$M = 0.95$					
-3	-0.7197	0.2017	0.1224	0.0852	0.0273	-3	-0.8079	0.2502	0.1563	0.0922	0.0323
-2	-0.6538	0.1877	0.1227	0.0774	0.0257	-2	-0.6970	0.2422	0.1474	0.0796	0.0316
-1	-0.5824	0.1822	0.1303	0.0702	0.0247	-1	-0.5940	0.2342	0.1437	0.0690	0.0307
0	-0.5274	0.1752	0.1288	0.0635	0.0239	0	-0.5148	0.2382	0.1509	0.0607	0.0292
1	-0.4835	0.1738	0.1270	0.0579	0.0236	1	-0.5712	0.2181	0.2589	0.0514	0.0280
2	-0.4258	0.1724	0.1364	0.0518	0.0226	2	-0.6811	0.2101	0.2357	0.0408	0.0274
3	-0.3708	0.1655	0.1388	0.0451	0.0216	3	-0.4974	0.2021	0.2213	0.0305	0.0258
5	-0.2253	0.1558	0.1372	0.0278	0.0200	5	-0.1489	0.1860	0.1712	0.0112	0.0238
7	-0.0632	0.1558	0.1339	0.0100	0.0195	7	0.2851	0.2021	0.0937	-0.0144	0.0255
10	0.2060	0.1864	0.1018	-0.0234	0.0229	10	0.8332	0.2422	-0.0131	-0.0504	0.0314
20	0.6455	0.3644	-0.0176	-0.0863	0.0473	20	0.7920	0.4138	-0.0399	-0.1044	0.0535
$M = 0.80$						$M = 1.00$					
-3	-0.7204	0.2056	0.1172	0.0846	0.0271	-3	-0.8033	0.2701	0.1764	0.0922	0.0350
-2	-0.6418	0.1942	0.1234	0.0759	0.0256	-2	-0.7048	0.2524	0.1592	0.0814	0.0330
-1	-0.5725	0.1847	0.1313	0.0679	0.0248	-1	-0.5911	0.2394	0.1509	0.0682	0.0311
0	-0.5052	0.1790	0.1336	0.0603	0.0242	0	-0.5001	0.2294	0.1504	0.0587	0.0298
1	-0.4472	0.1762	0.1345	0.0539	0.0233	1	-0.4244	0.2225	0.1539	0.0498	0.0285
2	-0.3779	0.1696	0.1374	0.0463	0.0226	2	-0.3183	0.2102	0.1519	0.0384	0.0268
3	-0.2975	0.1610	0.1392	0.0368	0.0214	3	-0.2425	0.2087	0.1583	0.0298	0.0264
5	-0.1366	0.1535	0.1427	0.0186	0.0203	5	-0.0682	0.2064	0.1524	0.0101	0.0261
7	0.0374	0.1563	0.1377	-0.0011	0.0203	7	0.1516	0.2179	0.1245	-0.0169	0.0275
10	0.3218	0.1932	0.0846	-0.0372	0.0253	10	0.4168	0.2624	0.0874	-0.0501	0.0341
20	0.7147	0.3713	-0.0264	-0.0941	0.0488	20	0.8184	0.4328	-0.0343	-0.1075	0.0557
$M = 0.85$						$M = 1.05$					
-3	-0.7344	0.2142	0.1181	0.0858	0.0281	-3	-0.7892	0.2637	0.1782	0.0897	0.0340
-2	-0.6470	0.1983	0.1204	0.0751	0.0265	-2	-0.6891	0.2438	0.1650	0.0788	0.0317
-1	-0.5701	0.1912	0.1296	0.0670	0.0255	-1	-0.6021	0.2306	0.1698	0.0697	0.0299
0	-0.4931	0.0947	0.1336	0.0585	0.0243	0	-0.4860	0.2203	0.1479	0.0559	0.0287
1	-0.4337	0.1806	0.1360	0.0514	0.0238	1	-0.7834	0.2093	0.2456	0.0456	0.0267
2	-0.3602	0.1744	0.1384	0.0432	0.0230	2	-0.6296	0.2034	0.2273	0.0368	0.0256
3	-0.2710	0.1638	0.1365	0.0333	0.0217	3	-0.4497	0.1998	0.2071	0.0273	0.0252
5	-0.1154	0.1594	0.1450	0.0160	0.0210	5	-0.0435	0.1990	0.1412	0.0044	0.0248
7	0.0595	0.1673	0.1405	-0.0046	0.0215	7	0.3627	0.2130	0.0638	-0.0059	0.0269
10	0.3427	0.2045	0.0926	-0.0404	0.0268	10	0.8066	0.2534	-0.0189	-0.0494	0.0329
20	0.7257	0.3754	-0.0280	-0.0954	0.0491	20	0.7979	0.4363	-0.0056	-0.1044	0.0545
$M = 0.90$						$M = 1.10$					
-3	-0.7700	0.2238	0.1233	0.0883	0.0301	-3	-0.7521	0.2517	0.1736	0.0861	0.0323
-2	-0.6657	0.2113	0.1241	0.0940	0.0279	-2	-0.6685	0.2320	0.1690	0.0771	0.0300
-1	-0.5796	0.2029	0.1273	0.0671	0.0268	-1	-0.5850	0.2193	0.1608	0.0678	0.0283
0	-0.5051	0.1945	0.1342	0.0587	0.0258	0	-0.4944	0.2066	0.1555	0.0573	0.0269
1	-0.4388	0.1920	0.1413	0.0514	0.0172	1	-0.3816	0.1967	0.1451	0.0452	0.0251
2	-0.3643	0.1861	0.1450	0.0430	0.0244	2	-0.2786	0.1918	0.1446	0.0333	0.0244
3	-0.2683	0.1735	0.1434	0.0319	0.0225	3	-0.1922	0.1897	0.1456	0.0240	0.0238
5	-0.0994	0.1710	0.1494	0.0141	0.0219	5	0.0139	0.1911	0.1228	-0.0006	0.0236
7	0.0911	0.1769	0.1350	-0.0084	0.0227	7	0.1950	0.2066	0.0992	-0.0223	0.0259
10	0.3643	0.2113	0.0864	-0.0440	0.0279	10	0.3900	0.2461	0.0744	-0.0474	0.0313
20	0.7535	0.3873	-0.0332	-0.0997	0.0509						

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.80$											
-3	-0.2449	0.0103	-0.0101	0.0285	0.0016	-3	-0.3383	0.0343	0.0196	0.0397	0.0034
-2	-0.1612	0.0083	-0.0053	0.0189	0.0012	-2	-0.2275	0.0236	0.0130	0.0261	0.0024
-1	-0.0877	0.0052	-0.0009	0.0105	0.0009	-1	-0.1225	0.0148	0.0062	0.0140	0.0015
0	-0.0204	0.0052	-0.0006	0.0022	0.0007	0	-0.0198	0.0118	0.0034	0.0020	0.0015
1	0.0510	0.0072	-0.0013	-0.0062	0.0009	1	0.1108	0.0159	-0.0033	-0.0135	0.0022
2	0.1347	0.0124	0.0050	-0.0158	0.0014	2	0.2275	0.0195	-0.0064	-0.0271	0.0030
3	0.2265	0.0186	0.0146	-0.0261	0.0022	3	0.3266	0.0283	-0.0144	-0.0387	0.0045
5	0.3612	0.0331	0.0206	-0.0422	0.0045	5	0.4935	0.0532	-0.0442	-0.0589	0.0086
7	0.5142	0.0630	0.0200	-0.0620	0.0090	7	0.6766	0.0915	-0.0761	-0.0800	0.0144
10	0.6754	0.1250	-0.0290	-0.0850	0.0178						
20	0.7571	0.3099	-0.0874	-0.1011	0.0421						
$M = 0.85$											
-3	-0.2978	0.0189	-0.0165	0.0347	0.0021	-3	-0.3233	0.0395	0.0298	0.0383	0.0040
-2	-0.1967	0.0112	-0.0101	0.0227	0.0014	-2	-0.2140	0.0282	0.0178	0.0253	0.0028
-1	-0.1108	0.0070	-0.0052	0.0124	0.0010	-1	-0.1059	0.0214	0.0079	0.0122	0.0022
0	-0.0139	0.0049	-0.0004	0.0015	0.0009	0	-0.0056	0.0186	0.0030	0.0007	0.0021
1	0.0803	0.0070	0.0070	-0.0095	0.0011	1	0.1059	0.0203	-0.0032	-0.0120	0.0026
2	0.1759	0.0119	0.0122	-0.0204	0.0018	2	0.2062	0.0265	-0.0127	-0.0247	0.0036
3	0.2811	0.0175	0.0187	-0.0328	0.0028	3	0.3066	0.0339	-0.0223	-0.0366	0.0052
5	0.4736	0.0386	0.0266	-0.0500	0.0064	5	0.4571	0.0553	-0.0402	-0.0539	0.0085
7	0.6371	0.0736	0.0190	-0.0750	0.0113	7	0.6020	0.0852	-0.0653	-0.0708	0.0134
10	0.8254	0.1388	-0.0054	-0.1006	0.0209						
$M = 0.90$											
-3	-0.3382	0.0230	-0.1118	0.0388	0.0024	-3	-0.2945	0.0380	0.1276	0.0345	0.0039
-2	-0.2081	0.0132	-0.1789	0.0241	0.0015	-2	-0.2035	0.0282	0.1195	0.0234	0.0027
-1	-0.1171	0.0079	-0.1471	0.0132	0.0009	-1	-0.1071	0.0217	0.1095	0.0117	0.0022
0	-0.0195	0.0066	-0.1133	0.0024	0.0010	0	-0.0054	0.0190	0.1029	0.0008	0.0020
1	0.0950	0.0072	0.1454	-0.0109	0.0012	1	0.1178	0.0222	-0.1070	-0.0132	0.0026
2	0.1912	0.0119	0.1845	-0.0221	0.0019	2	0.2035	0.0271	-0.1151	-0.0238	0.0036
3	0.3122	0.0191	0.1184	-0.0360	0.0033	3	0.2892	0.0342	-0.1232	-0.0340	0.0050
5	0.5203	0.0441	0.1459	-0.0605	0.0075	5	0.4391	0.0542	-0.1396	-0.0515	0.0082
7	0.6842	0.0790	0.1625	-0.0807	0.0129	7	0.5784	0.0868	-0.1607	-0.0686	0.0131
$M = 0.95$											
-3	-0.2801	0.0368	0.1283	0.0330	0.0037	-3	-0.2945	0.0380	0.1276	0.0345	0.0039
-2	-0.1919	0.0268	0.1191	0.0221	0.0027	-2	-0.2035	0.0282	0.1195	0.0234	0.0027
-1	-0.0830	0.0210	0.1077	0.0098	0.0021	-1	-0.1071	0.0217	0.1095	0.0117	0.0022
0	-0.0052	0.0189	0.1031	-0.0006	0.0020	0	-0.0054	0.0190	0.1029	0.0008	0.0020
1	0.0934	0.0210	-0.1040	-0.0032	0.0024	1	0.1178	0.0222	-0.1070	-0.0132	0.0026
2	0.2075	0.0273	-0.1172	-0.0240	0.0035	2	0.2035	0.0271	-0.1151	-0.0238	0.0036
3	0.2853	0.0341	-0.1237	-0.0333	0.0049	3	0.2892	0.0342	-0.1232	-0.0340	0.0050
5	0.4202	0.0525	-0.1375	-0.0491	0.0079	5	0.4391	0.0542	-0.1396	-0.0515	0.0082
7	0.5540	0.0819	-0.1588	-0.0648	0.0086	7	0.5784	0.0868	-0.1607	-0.0686	0.0131
$M = 1.00$											
-3	-0.3233	0.0395	0.0298	0.0383	0.0040	-3	-0.2945	0.0380	0.1276	0.0345	0.0039
-2	-0.2140	0.0282	0.0178	0.0253	0.0028	-2	-0.2035	0.0282	0.1195	0.0234	0.0027
-1	-0.1059	0.0214	0.0079	0.0122	0.0022	-1	-0.1071	0.0217	0.1095	0.0117	0.0022
0	-0.0056	0.0186	0.0030	0.0007	0.0021	0	-0.0054	0.0190	0.1029	0.0008	0.0020
1	0.1059	0.0203	-0.0032	-0.0120	0.0026	1	0.1178	0.0222	-0.1070	-0.0132	0.0026
2	0.2062	0.0265	-0.0127	-0.0247	0.0036	2	0.2035	0.0271	-0.1151	-0.0238	0.0036
3	0.3066	0.0339	-0.0223	-0.0366	0.0052	3	0.2892	0.0342	-0.1232	-0.0340	0.0050
5	0.4571	0.0553	-0.0402	-0.0539	0.0085	5	0.4391	0.0542	-0.1396	-0.0515	0.0082
7	0.6020	0.0852	-0.0653	-0.0708	0.0134	7	0.5784	0.0868	-0.1607	-0.0686	0.0131
$M = 1.05$											
-3	-0.2945	0.0380	0.1276	0.0345	0.0039	-3	-0.2945	0.0380	0.1276	0.0345	0.0039
-2	-0.2035	0.0282	0.1195	0.0234	0.0027	-2	-0.2035	0.0282	0.1195	0.0234	0.0027
-1	-0.1071	0.0217	0.1095	0.0117	0.0022	-1	-0.1071	0.0217	0.1095	0.0117	0.0022
0	-0.0054	0.0190	0.1029	0.0008	0.0020	0	-0.0054	0.0190	0.1029	0.0008	0.0020
1	0.1178	0.0222	-0.1070	-0.0132	0.0026	1	0.1178	0.0222	-0.1070	-0.0132	0.0026
2	0.2035	0.0271	-0.1151	-0.0238	0.0036	2	0.2035	0.0271	-0.1151	-0.0238	0.0036
3	0.2892	0.0342	-0.1232	-0.0340	0.0050	3	0.2892	0.0342	-0.1232	-0.0340	0.0050
5	0.4391	0.0542	-0.1396	-0.0515	0.0082	5	0.4391	0.0542	-0.1396	-0.0515	0.0082
7	0.5784	0.0868	-0.1607	-0.0686	0.0131	7	0.5784	0.0868	-0.1607	-0.0686	0.0131
$M = 1.10$											
-3	-0.2801	0.0368	0.1283	0.0330	0.0037	-3	-0.2801	0.0368	0.1283	0.0330	0.0037
-2	-0.1919	0.0268	0.1191	0.0221	0.0027	-2	-0.1919	0.0268	0.1191	0.0221	0.0027
-1	-0.0830	0.0210	0.1077	0.0098	0.0021	-1	-0.0830	0.0210	0.1077	0.0098	0.0021
0	-0.0052	0.0189	0.1031	-0.0006	0.0020	0	-0.0052	0.0189	0.1031	-0.0006	0.0020
1	0.0934	0.0210	-0.1040	-0.0032	0.0024	1	0.0934	0.0210	-0.1040	-0.0032	0.0024
2	0.2075	0.0273	-0.1172	-0.0240	0.0035	2	0.2075	0.0273	-0.1172	-0.0240	0.0035
3	0.2853	0.0341	-0.1237	-0.0333	0.0049	3	0.2853	0.0341	-0.1237	-0.0333	0.0049
5	0.4202	0.0525	-0.1375	-0.0491	0.0079	5	0.4202	0.0525	-0.1375	-0.0491	0.0079
7	0.5540	0.0819	-0.1588	-0.0648	0.0086	7	0.5540	0.0819	-0.1588	-0.0648	0.0086

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TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(b) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.3349	0.1459	-0.0911	0.0364	0.0200	-3	-0.5039	0.2211	-0.0547	0.0606	0.0282
-2	-0.3329	0.1387	-0.0973	0.0364	0.0191	-2	-0.4634	0.2064	-0.0619	0.0544	0.0265
-1	-0.3410	0.1367	-0.0993	0.0376	0.0187	-1	-0.4112	0.1941	-0.0668	0.0483	0.0252
0	-0.3389	0.1346	-0.0975	0.0367	0.0189	0	-0.3382	0.1888	-0.0729	0.0394	0.0247
1	-0.3166	0.1459	-0.0929	0.0336	0.0196	1	-0.3012	0.1877	-0.0668	0.0338	0.0248
2	-0.2862	0.1490	-0.0871	0.0290	0.0199	2	-0.2548	0.1877	-0.0662	0.0287	0.0248
3	-0.2436	0.1531	-0.0905	0.0213	0.0201	3	-0.2143	0.1877	-0.0708	0.0232	0.0249
5	-0.1461	0.1613	-0.0897	0.0080	0.0212	5	-0.1216	0.1847	-0.0845	0.0114	0.0250
7	-0.0507	0.1695	-0.0880	-0.0049	0.0222	7	-0.0174	0.1847	-0.0991	-0.0026	0.0251
10	0.1116	0.1850	-0.0872	-0.0247	0.0243	10	0.2433	0.1935	-0.1059	-0.0356	0.0263
20	0.5987	0.3000	-0.0772	-0.0845	0.0414						
$M = 0.80$											
-3	-0.4887	0.1721	-0.0744	0.0576	0.0234						
-2	-0.5093	0.1721	-0.0738	0.0586	0.0230						
-1	-0.5093	0.1687	-0.0845	0.0584	0.0225						
0	-0.4611	0.1624	-0.0857	0.0521	0.0221						
1	-0.4254	0.1603	-0.0854	0.0469	0.0220						
2	-0.3992	0.1582	-0.0734	0.0431	0.0218						
3	-0.3510	0.1589	-0.0677	0.0368	0.0219						
5	-0.2409	0.1603	-0.0733	0.0224	0.0221						
7	-0.0964	0.1638	-0.0847	0.0046	0.0228						
10	0.1583	0.1763	-0.0864	-0.0272	0.0244						
20	0.6539	0.3066	-0.0897	-0.0883	0.0429						
$M = 0.85$											
-3	-0.6049	0.2041	-0.0784	0.0717	0.0267						
-2	-0.5816	0.1943	-0.0779	0.0680	0.0253						
-1	-0.5493	0.1832	-0.0759	0.0627	0.0242						
0	-0.5066	0.1754	-0.0671	0.0570	0.0231						
1	-0.4549	0.1708	-0.0699	0.0503	0.0229						
2	-0.4136	0.1701	-0.0667	0.0444	0.0230						
3	-0.3490	0.1688	-0.0691	0.0362	0.0228						
5	-0.2391	0.1668	-0.0757	0.0226	0.0229						
7	-0.1060	0.1695	-0.0823	0.0063	0.0234						
10	0.1809	0.1799	-0.0906	-0.0297	0.0249						
20	0.6721	0.3075	-0.0938	-0.0900	0.0430						
$M = 0.90$											
-3	-0.6074	0.2190	-0.0506	0.0719	0.0280						
-2	-0.5683	0.2048	-0.0545	0.0665	0.0264						
-1	-0.5194	0.1918	-0.0560	0.0595	0.0249						
0	-0.4522	0.1844	-0.0565	0.0517	0.0242						
1	-0.4094	0.1844	-0.0510	0.0459	0.0241						
2	-0.3605	0.1825	-0.0558	0.0390	0.0242						
3	-0.3178	0.1794	-0.0597	0.0333	0.0239						
5	-0.1992	0.1763	-0.0759	0.0184	0.0240						
7	-0.0819	0.1732	-0.0889	0.0035	0.0239						
10	0.2017	0.1856	-0.0961	-0.0316	0.0254						
$M = 0.95$											
-3	-0.5039	0.2211	-0.0547	0.0606	0.0282						
-2	-0.4634	0.2064	-0.0619	0.0544	0.0265						
-1	-0.4112	0.1941	-0.0668	0.0483	0.0252						
0	-0.3382	0.1888	-0.0729	0.0394	0.0247						
1	-0.3012	0.1877	-0.0668	0.0338	0.0248						
2	-0.2548	0.1877	-0.0662	0.0287	0.0248						
3	-0.2143	0.1877	-0.0708	0.0232	0.0249						
5	-0.1216	0.1847	-0.0845	0.0114	0.0250						
7	-0.0174	0.1847	-0.0991	-0.0026	0.0251						
10	0.2433	0.1935	-0.1059	-0.0356	0.0263						
$M = 1.00$											
-3	-0.3898	0.2186	-0.0739	0.0468	0.0280						
-2	-0.3289	0.2074	-0.0851	0.0394	0.0269						
-1	-0.2768	0.1979	-0.0916	0.0330	0.0258						
0	-0.2104	0.1934	-0.0979	0.0253	0.0254						
1	-0.1439	0.1940	-0.0955	0.0168	0.0256						
2	-0.0997	0.1962	-0.0963	0.0116	0.0259						
3	-0.0443	0.1990	-0.1011	0.0039	0.0264						
5	0.0609	0.2057	-0.1176	-0.0093	0.0272						
7	0.1384	0.2102	-0.1287	-0.0195	0.0281						
10	0.4152	0.2298	-0.1450	-0.0539	0.0309						
$M = 1.05$											
-3	-0.3620	0.2118	-0.0735	0.0432	0.0267						
-2	-0.3087	0.2005	-0.0838	0.0364	0.0255						
-1	-0.2576	0.1940	-0.0902	0.0306	0.0248						
0	-0.1991	0.1913	-0.0967	0.0233	0.0245						
1	-0.1384	0.1913	-0.0942	0.0155	0.0244						
2	-0.0798	0.1940	-0.0944	0.0087	0.0245						
3	-0.0298	0.1967	-0.0994	0.0024	0.0248						
5	0.0639	0.2032	-0.1144	-0.0091	0.0257						
7	0.1597	0.2129	-0.1295	-0.0217	0.0272						
10	0.3832	0.2269	-0.1429	-0.0497	0.0297						
$M = 1.10$											
-3	-0.3506	0.2073	-0.0719	0.0414	0.0257						
-2	-0.3063	0.1984	-0.0793	0.0362	0.0246						
-1	-0.2475	0.1905	-0.0873	0.0292	0.0238						
0	-0.1856	0.1864	-0.0938	0.0218	0.0233						
1	-0.1237	0.1879	-0.0910	0.0140	0.0233						
2	-0.0691	0.1905	-0.0923	0.0072	0.0234						
3	-0.0278	0.1932	-0.0971	0.0017	0.0237						
5	0.0588	0.1984	-0.1100	-0.0088	0.0244						
7	0.1547	0.2088	-0.1215	-0.0205	0.0260						
10	0.3743	0.2229	-0.1400	-0.0488	0.0287						

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TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(c) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$											
-3	-0.4652	0.1705	-0.0718	0.0555	0.0246	-3	-0.5069	0.2626	-0.0741	0.0615	0.0339
-2	-0.4734	0.1715	-0.0657	0.0562	0.0239	-2	-0.4778	0.2478	-0.0772	0.0400	0.0322
-1	-0.4591	0.1736	-0.0613	0.0546	0.0237	-1	-0.4079	0.2419	-0.0860	0.0496	0.0314
0	-0.4469	0.1746	-0.0669	0.0521	0.0240	0	-0.3613	0.2354	-0.0792	0.0439	0.0309
1	-0.4285	0.1829	-0.0478	0.0490	0.0246	1	-0.3380	0.2342	-0.0717	0.0400	0.0306
2	-0.4081	0.1829	-0.0480	0.0456	0.0247	2	-0.3263	0.2330	-0.0652	0.0377	0.0221
3	-0.3857	0.1818	-0.0454	0.0468	0.0246	3	-0.2797	0.2301	-0.0695	0.0333	0.0302
5	-0.3143	0.1808	-0.0534	0.0313	0.0243	5	-0.2273	0.2195	-0.0708	0.0262	0.0292
7	-0.2041	0.1818	-0.0673	0.0171	0.0246	7	-0.1399	0.2154	-0.0808	0.0156	0.0287
10	-0.0163	0.1890	-0.0835	-0.0062	0.0255	10	0.0816	0.2124	-0.0978	-0.0124	0.0283
20	0.4877	0.2944	-0.0890	-0.0698	0.0394	20	0.5594	0.3009	-0.1212	-0.0703	0.0380
$M = 0.80$											
-3	-0.4706	0.1955	-0.0560	0.0585	0.0265	-3	-0.4345	0.2566	-0.0832	0.0539	0.0334
-2	-0.4775	0.1962	-0.0551	0.0585	0.0264	-2	-0.3788	0.2442	-0.0959	0.0454	0.0321
-1	-0.4872	0.1962	-0.0546	0.0595	0.0264	-1	-0.3175	0.2358	-0.1034	0.0383	0.0310
0	-0.4733	0.1955	-0.0482	0.0572	0.0262	0	-0.2473	0.2324	-0.1033	0.0303	0.0306
1	-0.4429	0.1976	-0.0404	0.0528	0.0265	1	-0.2005	0.2341	-0.1036	0.0239	0.0308
2	-0.4249	0.1976	-0.0356	0.0499	0.0266	2	-0.1560	0.2369	-0.1018	0.0186	0.0312
3	-0.4152	0.1962	-0.0286	0.0480	0.0263	3	-0.1058	0.2380	-0.1066	0.0129	0.0314
5	-0.3847	0.1906	-0.0230	0.0429	0.0255	5	-0.0111	0.2425	-0.1209	0.0008	0.0315
7	-0.2865	0.1857	-0.0403	0.0292	0.0251	7	0.0780	0.2453	-0.1344	-0.0071	0.0320
10	-0.0554	0.1836	-0.0679	0.0000	0.0252	10	0.2507	0.2453	-0.1377	-0.0317	0.0325
20	0.5398	0.2978	-0.1043	-0.0734	0.0405	20	0.5236	0.2764	-0.1098	-0.0545	0.0344
$M = 0.85$											
-3	-0.5004	0.2106	-0.0577	0.0609	0.0281	-3	-0.4067	0.2482	-0.0803	0.0495	0.0317
-2	-0.5719	0.2283	-0.0536	0.0682	0.0297	-2	-0.3607	0.2384	-0.0904	0.0433	0.0306
-1	-0.5615	0.2205	-0.0549	0.0674	0.0290	-1	-0.3050	0.2303	-0.0994	0.0371	0.0296
0	-0.5264	0.2139	-0.0447	0.0634	0.0281	0	-0.2333	0.2249	-0.1004	0.0286	0.0288
1	-0.5004	0.2139	-0.0394	0.0589	0.0280	1	-0.1894	0.2276	-0.0992	0.0228	0.0291
2	-0.4329	0.2053	-0.0318	0.0516	0.0272	2	-0.1424	0.2303	-0.1011	0.0172	0.0294
3	-0.4419	0.2053	-0.0244	0.0516	0.0272	3	-0.0931	0.2330	-0.1034	0.0111	0.0297
5	-0.3965	0.1987	-0.0292	0.0445	0.0265	5	-0.0107	0.2357	-0.1153	0.0007	0.0301
7	-0.2938	0.1922	-0.0403	0.0312	0.0258	7	0.0835	0.2400	-0.1283	-0.0104	0.0304
10	-0.0390	0.1823	-0.0667	0.0000	0.0255	10	0.2676	0.2455	-0.1410	-0.0329	0.0316
20	0.5849	0.3126	-0.1201	-0.0783	0.0421	$M = 1.05$					
$M = 0.90$											
-3	-0.5529	0.2364	-0.0685	0.0678	0.0311	-3	-0.3888	0.2430	-0.0818	0.0470	0.0307
-2	-0.5824	0.2439	-0.0565	0.0702	0.0316	-2	-0.3463	0.2346	-0.0890	0.0418	0.0298
-1	-0.5529	0.2364	-0.0512	0.0661	0.0309	-1	-0.2955	0.2273	-0.0968	0.0359	0.0287
0	-0.5136	0.2327	-0.0448	0.0615	0.0302	0	-0.2281	0.2215	-0.0978	0.0281	0.0279
1	-0.4854	0.2289	-0.0419	0.0575	0.0301	1	-0.1711	0.2257	-0.0956	0.0210	0.0282
2	-0.4546	0.2246	-0.0376	0.0534	0.0296	2	-0.1296	0.2283	-0.0972	0.0154	0.0286
3	-0.4116	0.2208	-0.0372	0.0484	0.0289	3	-0.0778	0.2309	-0.1042	0.0091	0.0287
5	-0.3342	0.2115	-0.0458	0.0381	0.0281	5	-0.0031	0.2336	-0.1116	0.0000	0.0289
7	-0.2359	0.2034	-0.0560	0.0252	0.0273	7	0.0829	0.2362	-0.1247	-0.0109	0.0295
10	0.0000	0.1959	-0.0738	-0.0045	0.0264	10	0.2696	0.2441	-0.1350	-0.0331	0.0304
20	0.6070	0.3173	-0.1288	-0.0792	0.0424	$M = 1.10$					

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(d) $x_s/c = 0.30; \delta_s = -0.075; \delta_d/\delta_s = 1.00$

α, deg	c_L	c_D	c_M	c_l	c_n	α, deg	c_L	c_D	c_M	c_l	c_n
$M = 0.60$											
$M = 0.80$											
-3	-0.3927	0.2071	-0.0555	0.0513	0.0292	-3	-0.8648	0.2958	0.1358	0.0533	0.0379
-2	-0.3927	0.2123	-0.0499	0.0504	0.0300	-2	-0.3915	0.2869	-0.0533	0.0497	0.0350
-1	-0.3682	0.2226	-0.0414	0.0470	0.0309	-1	-0.3623	0.2869	-0.0535	0.0462	0.0355
0	-0.3784	0.2309	-0.0341	0.0470	0.0318	0	-0.3214	0.2692	-0.0503	0.0409	0.0363
1	-0.3620	0.2299	-0.0278	0.0435	0.0310	1	-0.3623	0.2781	-0.0397	0.0444	0.0360
2	-0.3682	0.2278	-0.0290	0.0423	0.0310	2	-0.3389	0.2751	-0.0403	0.0497	0.0358
3	-0.3579	0.2278	-0.0240	0.0404	0.0310	3	-0.3272	0.2674	-0.0378	0.0391	0.0350
5	-0.3477	0.1646	-0.0148	0.0382	0.0297	5	-0.2863	0.2544	-0.0339	0.0338	0.0334
7	-0.3150	0.2143	-0.0170	0.0323	0.0289	7	-0.2220	0.2426	-0.0366	0.0298	0.0320
10	-0.1800	0.2092	-0.0335	0.0451	0.0281	10	0.0058	0.2278	-0.0482	-0.0036	0.0297
20	0.3989	0.2930	-0.0931	-0.0575	0.0393	20	0.5025	0.2928	-0.1152	-0.0648	0.0388
$M = 0.85$											
-3	-0.3372	0.2178	-0.0605	0.0449	0.0298	-3	-0.3798	0.2873	-0.0651	0.0459	0.0360
-2	-0.3192	0.2213	-0.0553	0.0426	0.0301	-2	-0.3239	0.2794	-0.0667	0.0396	0.0356
-1	-0.2914	0.2283	-0.0496	0.0386	0.0307	-1	-0.2659	0.2794	-0.0707	0.0321	0.0355
0	-0.3053	0.2318	-0.0401	0.0390	0.0314	0	-0.2212	0.2799	-0.0744	0.0277	0.0359
1	-0.3331	0.2354	-0.0314	0.0407	0.0318	1	-0.1877	0.2828	-0.0793	0.0229	0.0358
2	-0.3331	0.2354	-0.0256	0.0411	0.0314	2	-0.1430	0.2816	-0.0840	0.0178	0.0361
3	-0.3331	0.2332	-0.0189	0.0407	0.0311	3	-0.1016	0.2816	-0.0886	0.0127	0.0358
5	-0.3455	0.2255	-0.0062	0.0401	0.0303	5	-0.0279	0.2782	-0.0976	0.0034	0.0353
7	-0.3331	0.2185	-0.0023	0.0378	0.0292	7	0.0559	0.2771	-0.1079	-0.0068	0.0353
10	-0.1832	0.2037	-0.0083	0.0169	0.0277	10	0.2625	0.2658	-0.1089	-0.0318	0.0339
20	0.4371	0.2930	-0.0948	-0.0601	0.0398	20	0.3854	0.2601	-0.0818	-0.0476	0.0322
$M = 0.90$											
-3	-0.3271	0.2243	-0.0630	0.0438	0.0306	-3	-0.3563	0.2717	-0.0623	0.0457	0.0342
-2	-0.3128	0.2243	-0.0583	0.0412	0.0305	-2	-0.3080	0.1576	-0.0681	0.0379	0.0337
-1	-0.2776	0.2309	-0.0535	0.0371	0.0311	-1	-0.2576	0.2662	-0.0680	0.0318	0.0336
0	-0.2737	0.2316	-0.0446	0.0359	0.0312	0	-0.2039	0.2673	-0.0721	0.0263	0.0337
1	-0.2880	0.2323	-0.0384	0.0369	0.0312	1	-0.1760	0.2695	-0.0761	0.0219	0.0337
2	-0.3063	0.2356	-0.0277	0.0384	0.0313	2	-0.1342	0.2706	-0.0809	0.0170	0.0337
3	-0.3154	0.2342	-0.0192	0.0396	0.0312	3	-0.0944	0.2706	-0.0850	0.0117	0.0336
5	-0.3454	0.2342	-0.0048	0.0410	0.0308	5	-0.0161	0.2706	-0.0971	0.0021	0.0334
7	-0.3506	0.2243	-0.0015	0.0402	0.0301	7	0.0719	0.2717	-0.1026	-0.0073	0.0334
10	-0.1694	0.2046	-0.0055	0.0159	0.0281	10	0.2662	0.2608	-0.1113	-0.0318	0.0323
20	0.4692	0.3035	-0.1052	-0.0646	0.0407	20	0.3273	0.2282	-0.0619	-0.0375	0.0279
$M = 0.95$											
-3	-0.3167	0.2290	-0.0661	0.0422	0.0313	-3	-0.3433	0.1369	-0.0667	0.0421	0.0335
-2	-0.2958	0.2309	-0.0613	0.0390	0.0313	-2	-0.2913	0.1348	-0.0671	0.0364	0.0329
-1	-0.2687	0.2352	-0.0559	0.0543	0.0315	-1	-0.2424	0.1348	-0.0691	0.0305	0.0329
0	-0.2773	0.2433	-0.0445	0.0551	0.0322	0	-0.1997	0.1353	-0.0717	0.0253	0.0330
1	-0.2958	0.2415	-0.0358	0.0378	0.0322	1	-0.1633	0.1369	-0.0741	0.0206	0.0332
2	-0.3328	0.2477	-0.0242	0.0422	0.0328	2	-0.1186	0.1369	-0.0787	0.0153	0.0328
3	-0.3759	0.2496	-0.0146	0.0472	0.0332	3	-0.0811	0.1364	-0.0826	0.0104	0.0326
5	-0.3821	0.2496	-0.0095	0.0455	0.0330	5	0.0052	0.1364	-0.0936	0.0000	0.0325
7	-0.3044	0.2359	-0.0168	0.0352	0.0315	7	0.0811	0.1359	-0.1013	-0.0092	0.0325
10	-0.0986	0.2134	-0.0212	0.0084	0.0289	10	0.2705	0.1280	-0.0998	-0.0324	0.0312
20	0.5090	0.3120	-0.1170	-0.0684	0.0405	20	-0.0104	0.0026	-0.0016	0.0009	0.0004
$M = 1.00$											
$M = 1.05$											
-3	-0.3271	0.2243	-0.0630	0.0438	0.0306	-3	-0.3563	0.2717	-0.0623	0.0457	0.0342
-2	-0.3128	0.2243	-0.0583	0.0412	0.0305	-2	-0.3080	0.1576	-0.0681	0.0379	0.0337
-1	-0.2776	0.2309	-0.0535	0.0371	0.0311	-1	-0.2576	0.2662	-0.0680	0.0318	0.0336
0	-0.2737	0.2316	-0.0446	0.0359	0.0312	0	-0.2039	0.2673	-0.0721	0.0263	0.0337
1	-0.2880	0.2323	-0.0384	0.0369	0.0312	1	-0.1760	0.2695	-0.0761	0.0219	0.0337
2	-0.3063	0.2356	-0.0277	0.0384	0.0313	2	-0.1342	0.2706	-0.0809	0.0170	0.0337
3	-0.3154	0.2342	-0.0192	0.0396	0.0312	3	-0.0944	0.2706	-0.0850	0.0117	0.0336
5	-0.3454	0.2342	-0.0048	0.0410	0.0308	5	-0.0161	0.2706	-0.0971	0.0021	0.0334
7	-0.3506	0.2243	-0.0015	0.0402	0.0301	7	0.0719	0.2717	-0.1026	-0.0073	0.0334
10	-0.1694	0.2046	-0.0055	0.0159	0.0281	10	0.2662	0.2608	-0.1113	-0.0318	0.0323
20	0.4692	0.3035	-0.1052	-0.0646	0.0407	20	0.3273	0.2282	-0.0619	-0.0375	0.0279
$M = 1.10$											
-3	-0.3167	0.2290	-0.0661	0.0422	0.0313	-3	-0.3433	0.1369	-0.0667	0.0421	0.0335
-2	-0.2958	0.2309	-0.0613	0.0390	0.0313	-2	-0.2913	0.1348	-0.0671	0.0364	0.0329
-1	-0.2687	0.2352	-0.0559	0.0543	0.0315	-1	-0.2424	0.1348	-0.0691	0.0305	0.0329
0	-0.2773	0.2433	-0.0445	0.0551	0.0322	0	-0.1997	0.1353	-0.0717	0.0253	0.0330
1	-0.2958	0.2415	-0.0358	0.0378	0.0322	1	-0.1633	0.1369	-0.0741	0.0206	0.0332
2	-0.3328	0.2477	-0.0242	0.0422	0.0328	2	-0.1186	0.1369	-0.0787	0.0153	0.0328
3	-0.3759	0.2496	-0.0146	0.0472	0.0332	3	-0.0811	0.1364	-0.0826	0.0104	0.0326
5	-0.3821	0.2496	-0.0095	0.0455	0.0330	5	0.0052	0.1364	-0.0936	0.0000	0.0325
7	-0.3044	0.2359	-0.0168	0.0352	0.0315	7	0.0811	0.1359	-0.1013	-0.0092	0.0325
10	-0.0986	0.2134	-0.0212	0.0084	0.0289	10	0.2705	0.1280	-0.0998	-0.0324	0.0312
20	0.5090	0.3120	-0.1170	-0.0684	0.0405	20	-0.0104	0.0026	-0.0016	0.0009	0.0004

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(e) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-2	-0.6081	0.1560	-0.0567	0.0724	0.0203
-1	-0.5918	0.1539	-0.0426	0.0686	0.0198
0	-0.5550	0.1508	-0.0296	0.0639	0.0194
1	-0.5224	0.1477	-0.0270	0.0585	0.0192
2	-0.4652	0.1457	-0.0278	0.0515	0.0191
3	-0.4081	0.1457	-0.0256	0.0442	0.0190
5	-0.2959	0.1457	-0.0220	0.0295	0.0188
7	-0.1530	0.1436	-0.0195	0.0119	0.0188
10	0.1836	0.1539	-0.0222	-0.0276	0.0200
20	0.5734	0.3006	-0.0548	-0.0807	0.0331
$M = 0.80$					
-3	-0.7947	0.2054	-0.0374	0.0916	0.0250
-2	-0.7476	0.1963	-0.0284	0.0857	0.0240
-1	-0.6853	0.1829	-0.0138	0.0794	0.0227
0	-0.6369	0.1808	-0.0054	0.0732	0.0227
1	-0.5870	0.1724	0.0042	0.0669	0.0217
2	-0.5344	0.1689	0.0120	0.0604	0.0211
3	-0.4707	0.1619	0.0139	0.0522	0.0206
5	-0.3461	0.1542	0.0139	0.0364	0.0196
7	-0.1661	0.1451	0.0105	0.0152	0.0188
10	0.2215	0.1528	-0.0061	-0.0322	0.0202
20	0.6022	0.3056	-0.0611	-0.0819	0.0408
$M = 0.85$					
-3	-0.7802	0.2212	-0.0285	0.0805	0.0266
-2	-0.7412	0.2080	-0.0276	0.0850	0.0252
-1	-0.6814	0.1981	-0.0106	0.0783	0.0240
0	-0.6137	0.1916	0.0025	0.0706	0.0235
1	-0.5656	0.1850	0.0079	0.0646	0.0230
2	-0.5071	0.1817	0.0113	0.0569	0.0228
5	-0.3251	0.1619	0.0139	0.0340	0.0206
7	-0.1560	0.1521	0.0123	0.0146	0.0195
10	0.2276	0.1560	-0.0028	-0.0322	0.0207
20	0.6397	0.3120	-0.0679	-0.0860	0.0415
$M = 0.90$					
-3	-0.7252	0.2383	-0.0290	0.0845	0.0286
-2	-0.6883	0.2184	-0.0289	0.0794	0.0261
-1	-0.6269	0.2060	-0.0280	0.0719	0.0248
0	-0.5347	0.1998	-0.0227	0.0611	0.0243
1	-0.4671	0.1966	-0.0147	0.0536	0.0241
2	-0.4204	0.1885	-0.0076	0.0471	0.0236
3	-0.3626	0.1823	-0.0054	0.0402	0.0230
5	-0.2335	0.1736	-0.0006	0.0247	0.0219
7	-0.0885	0.1618	0.0033	0.0256	0.0207
10	0.2520	0.1655	-0.0039	-0.0342	0.0220
20	0.6761	0.3211	-0.0780	-0.0893	0.0410

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-3	-0.6181	0.2427	-0.0532	0.0713	0.0298
-2	-0.5598	0.2249	-0.0590	0.0642	0.0279
-1	-0.5329	0.2072	-0.0505	0.0624	0.0253
0	-0.4490	0.2013	-0.0541	0.0518	0.0250
1	-0.3732	0.1972	-0.0413	0.0426	0.0250
2	-0.3149	0.1937	-0.0306	0.0441	0.0245
3	-0.2566	0.1895	-0.0310	0.0289	0.0239
5	-0.1574	0.1777	-0.0202	0.0172	0.0226
7	0.0175	0.1748	-0.0194	-0.0039	0.0222
10	0.2974	0.1777	-0.0157	-0.0379	0.0234
20	0.6764	0.2946	-0.0765	-0.0847	0.0404
$M = 1.00$					
-3	-0.5247	0.2362	-0.0688	0.0618	0.0287
-2	-0.4688	0.2215	-0.0746	0.0550	0.0271
-1	-0.4019	0.2119	-0.0828	0.0477	0.0260
0	-0.3237	0.2034	-0.0877	0.0382	0.0253
1	-0.2456	0.2034	-0.0816	0.0290	0.0255
2	-0.1820	0.2034	-0.0749	0.0214	0.0256
3	-0.1250	0.2006	-0.0719	0.0151	0.0252
5	-0.0112	0.1961	-0.0655	0.0008	0.0245
7	0.1395	0.1905	-0.0491	-0.0165	0.0240
10	0.3851	0.1950	-0.0402	-0.0468	0.0256
20	0.5693	0.2769	-0.0575	-0.0706	0.0347
$M = 1.05$					
-3	-0.5094	0.2280	-0.0648	0.0616	0.0277
-2	-0.4558	0.2156	-0.0732	0.0546	0.0263
-1	-0.3915	0.2047	-0.0806	0.0471	0.0249
0	-0.3217	0.1955	-0.0858	0.0398	0.0239
1	-0.2359	0.1955	-0.0829	0.0292	0.0245
2	-0.1770	0.1960	-0.0757	0.0218	0.0246
3	-0.1180	0.1949	-0.0721	0.0153	0.0243
5	-0.0097	0.1922	-0.0648	0.0015	0.0238
7	0.1501	0.1857	-0.0519	-0.0170	0.0226
10	0.4183	0.2020	-0.0536	-0.0491	0.0265
$M = 1.10$					
-3	-0.4936	0.2236	-0.0657	0.0594	0.0267
-2	-0.4344	0.2094	-0.0734	0.0526	0.0253
-1	-0.3741	0.1994	-0.0800	0.0453	0.0242
0	-0.3066	0.2168	-0.0832	0.0378	0.0234
1	-0.2338	0.1920	-0.0819	0.0284	0.0235
2	-0.1611	0.1920	-0.0719	0.0197	0.0237
3	-0.1143	0.1899	-0.0699	0.0145	0.0235
5	0.0000	0.1873	-0.0640	0.0003	0.0231
7	0.1455	0.1815	-0.0503	-0.0167	0.0224
10	0.4105	0.1999	-0.0517	-0.0490	0.0259

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TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(f) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.7088	0.2005	-0.0192	0.0852	0.0262	-3	-0.6776	0.2820	-0.0478	0.0792	0.0390
-2	-0.6804	0.2005	-0.0072	0.0824	0.0261	-2	-0.6312	0.2702	-0.0509	0.0737	0.0333
-1	-0.6296	0.2005	0.0021	0.0760	0.0259	-1	-0.5570	0.2585	-0.0544	0.0658	0.0321
0	-0.6052	0.2056	0.0150	0.0723	0.0261	0	-0.4873	0.2497	-0.0340	0.0579	0.0311
1	-0.5788	0.2015	0.0188	0.0682	0.0259	1	-0.4467	0.2455	-0.0186	0.0526	0.0304
2	-0.5484	0.1974	0.0234	0.0642	0.0253	2	-0.4119	0.2379	-0.0014	0.0482	0.0296
3	-0.5077	0.1954	0.0361	0.0580	0.0246	3	-0.3481	0.2350	-0.0022	0.0420	0.0289
5	-0.4387	0.1851	0.0405	0.0488	0.0236	5	-0.2553	0.2185	-0.0108	0.0296	0.0271
7	-0.3290	0.1748	0.0445	0.0349	0.0223	7	-0.1160	0.2085	-0.0208	0.0129	0.0258
10	-0.0305	0.1676	0.0371	-0.0006	0.0215	10	0.1450	0.2027	-0.0188	-0.0286	0.0256
20	0.4021	0.2879	-0.0282	-0.0577	0.0370	20	0.4235	0.2761	-0.0218	-0.0542	0.0346
$M = 0.80$											
-3	-0.7439	0.2371	-0.0293	0.0880	0.0298	-3	-0.5988	0.2790	-0.0645	0.0695	0.0343
-2	-0.6502	0.2232	-0.0205	0.0785	0.0281	-2	-0.5433	0.2666	-0.0735	0.0629	0.0330
-1	-0.5854	0.2211	-0.0087	0.0708	0.0275	-1	-0.4823	0.2543	-0.0786	0.0555	0.0318
0	-0.5469	0.2197	0.0018	0.0658	0.0273	0	-0.3881	0.2470	-0.0767	0.0367	0.0311
1	-0.5097	0.2127	0.0109	0.0612	0.0317	1	-0.3215	0.2470	-0.0680	0.0369	0.0311
2	-0.4711	0.2057	0.0215	0.0563	0.0260	2	-0.2628	0.2470	-0.0599	0.0302	0.0311
3	-0.4449	0.2022	0.0314	0.0530	0.0255	3	-0.2085	0.2442	-0.0550	0.0239	0.0305
5	-0.3885	0.1953	0.0505	0.0457	0.0245	5	-0.1053	0.2369	-0.0482	0.0116	0.0296
7	-0.2783	0.1820	0.0655	0.0320	0.0230	7	0.0333	0.2290	-0.0355	-0.0052	0.0283
10	-0.0055	0.1702	0.0603	-0.0019	0.0216	10	0.2994	0.2302	-0.0294	-0.0371	0.0291
20	0.4339	0.2873	-0.0283	-0.0591	0.0376	20	0.3548	0.2442	-0.0035	-0.0450	0.0299
$M = 0.85$											
-3	-0.7633	0.2489	-0.0232	0.0901	0.0309	-3	-0.5753	0.2697	-0.0633	0.0670	0.0334
-2	-0.6909	0.2338	-0.0157	0.0826	0.0293	-2	-0.5167	0.2573	-0.0725	0.0604	0.0320
-1	-0.5822	0.2260	-0.0091	0.0706	0.0280	-1	-0.4634	0.2465	-0.0768	0.0539	0.0306
0	-0.5304	0.2194	0.0023	0.0645	0.0275	0	-0.3888	0.2378	-0.0786	0.0457	0.0298
1	-0.4981	0.2181	0.0178	0.0600	0.0271	1	-0.3132	0.2384	-0.0687	0.0360	0.0300
2	-0.4722	0.2161	0.0256	0.0566	0.0270	2	-0.2557	0.2384	-0.0592	0.0298	0.0298
3	-0.4528	0.2129	0.0396	0.0547	0.0264	3	-0.2024	0.2362	-0.0539	0.0240	0.0295
5	-0.4140	0.2050	0.0606	0.0488	0.0255	5	-0.0959	0.2292	-0.0467	0.0109	0.0286
7	-0.2846	0.1880	0.0729	0.0328	0.0234	7	0.0426	0.2211	-0.0352	-0.0060	0.0276
10	0.0039	0.1768	0.0655	-0.0024	0.0223	10	0.3036	0.2254	-0.0327	-0.0368	0.0287
20	0.4567	0.2915	-0.0302	-0.0610	0.0378	$M = 1.05$					
$M = 0.90$											
-3	-0.7583	0.2662	-0.0206	0.0904	0.0325	-3	-0.5473	0.2614	-0.0633	0.0642	0.0322
-2	-0.7387	0.2600	-0.0115	0.0772	0.0319	-2	-0.5008	0.2494	-0.0691	0.0587	0.0310
-1	-0.6678	0.2520	-0.0065	0.0786	0.0312	-1	-0.4440	0.2378	-0.0728	0.0523	0.0297
0	-0.5993	0.2477	0.0119	0.0720	0.0305	0	-0.3769	0.2300	-0.0750	0.0444	0.0289
1	-0.5503	0.2415	0.0202	0.0653	0.0300	1	-0.2736	0.2326	-0.0614	0.0327	0.0289
2	-0.5075	0.2365	0.0296	0.0602	0.0294	2	-0.2427	0.2326	-0.0569	0.0287	0.0289
3	-0.4586	0.2291	0.0339	0.0550	0.0285	3	-0.1807	0.2290	-0.0532	0.0217	0.0285
5	-0.3608	0.2124	0.0460	0.0424	0.0264	5	-0.0826	0.2248	-0.0450	0.0097	0.0275
7	-0.2140	0.1950	0.0530	0.0253	0.0242	7	0.0723	0.2180	-0.0332	-0.0089	0.0264
10	0.0550	0.1857	0.0492	-0.0084	0.0232	10	0.3098	0.2243	-0.0311	-0.0380	0.0280
20	0.4892	0.3034	-0.0372	-0.0643	0.0388	$M = 1.10$					

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(g) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-3	-0.5965	0.2211	-0.0179	0.0758	0.0295
-2	-0.4793	0.2191	-0.0169	0.0609	0.0295
-1	-0.4206	0.2232	-0.0110	0.0536	0.0295
0	-0.3963	0.2242	0.0001	0.0512	0.0293
1	-0.3842	0.2242	0.0028	0.0489	0.0295
2	-0.3680	0.2232	0.0108	0.0466	0.0293
3	-0.3478	0.2211	0.0245	0.0438	0.0287
5	-0.3175	0.2160	0.0416	0.0386	0.0281
7	-0.2548	0.2048	0.0570	0.0300	0.0267
10	-0.0849	0.1986	0.0694	0.0078	0.0258
20	-0.2447	0.2754	0.0349	-0.0361	0.0350
$M = 0.80$					
-3	-0.5447	0.2389	-0.0393	0.0670	0.0309
-2	-0.4665	0.2334	-0.0368	0.0580	0.0304
-1	-0.4157	0.2341	-0.0267	0.0517	0.0304
0	-0.3883	0.2355	-0.0161	0.0980	0.0303
1	-0.3691	0.2334	-0.0066	0.0459	0.0303
2	-0.3430	0.2320	0.0031	0.0430	0.0299
3	-0.3224	0.2306	0.0150	0.0405	0.0296
5	-0.2703	0.2216	0.0376	0.0340	0.0284
7	-0.1921	0.2112	0.0566	0.0236	0.0269
10	-0.0206	0.2077	0.0690	0.0008	0.0268
20	-0.2566	0.2771	0.0453	-0.0369	0.0358
$M = 0.85$					
-3	-0.5478	0.2473	-0.0439	0.0672	0.0319
-2	-0.4705	0.2388	-0.0407	0.0580	0.0311
-1	-0.4151	0.2375	-0.0322	0.0517	0.0308
0	-0.3867	0.2375	-0.0169	0.0484	0.0308
1	-0.3674	0.2375	-0.0065	0.0455	0.0307
2	-0.3390	0.2356	0.0047	0.0423	0.0305
3	-0.3145	0.2343	0.0177	0.0392	0.0302
5	-0.2668	0.2271	0.0399	0.0331	0.0291
7	-0.1689	0.2140	0.0657	0.0212	0.0276
10	-0.0129	0.2121	0.0733	-0.0002	0.0272
20	-0.2746	0.2800	0.0486	-0.0386	0.0363
$M = 0.90$					
-3	-0.5717	0.2604	-0.0482	0.0686	0.0334
-2	-0.4741	0.2481	-0.0491	0.0580	0.0322
-1	-0.4205	0.2487	-0.0336	0.0515	0.0320
0	-0.4035	0.2493	-0.0123	0.0484	0.0318
1	-0.3693	0.2481	-0.0060	0.0450	0.0317
2	-0.3474	0.2462	0.0083	0.0422	0.0313
3	-0.3254	0.2419	0.0217	0.0397	0.0309
5	-0.2743	0.2333	0.0465	0.0335	0.0297
7	-0.1780	0.2234	0.0664	0.0219	0.0287
10	-0.0195	0.2215	0.0760	0.0013	0.0283
20	-0.3084	0.2913	0.0427	-0.0421	0.0373

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-3	-0.6245	0.2974	-0.0472	0.0735	0.0375
-2	-0.5320	0.2974	-0.0424	0.0638	0.0367
-1	-0.4799	0.2916	-0.0226	0.0577	0.0358
0	-0.4279	0.2916	-0.0094	0.0515	0.0362
1	-0.4001	0.2763	0.0086	0.0480	0.0346
2	-0.3770	0.2717	0.0177	0.0454	0.0338
3	-0.3585	0.2635	0.0305	0.0436	0.0334
5	-0.2880	0.2506	0.0513	0.0352	0.0317
7	-0.1561	0.2389	0.0589	0.0197	0.0303
10	-0.0405	0.2377	0.0547	-0.0053	0.0295
20	-0.2949	0.2799	0.0449	-0.0390	0.0354
$M = 1.00$					
-3	-0.5857	0.3077	0.0470	0.0694	0.0387
-2	-0.5006	0.0783	0.0284	0.0586	0.0382
-1	-0.4045	0.2976	0.0220	0.0480	0.0378
0	-0.3426	0.2954	-0.0518	0.0408	0.0377
1	-0.3050	0.2954	-0.0441	0.0358	0.0375
2	-0.2564	0.2943	-0.0380	0.0304	0.0372
3	-0.2100	0.2898	-0.0349	0.0245	0.0367
5	-0.1127	0.2786	-0.0241	0.0131	0.0352
7	-0.0442	0.2708	-0.0162	-0.0045	0.0339
10	-0.2630	0.2730	-0.0143	-0.0321	0.0348
20	-0.2486	0.2562	0.0557	-0.0323	0.0317
$M = 1.05$					
-3	-0.5585	0.3032	-0.0615	0.0654	0.0379
-2	-0.4778	0.2903	-0.0652	0.0562	0.0367
-1	-0.3886	0.2849	-0.0585	0.0462	0.0361
0	-0.3238	0.2838	-0.0511	0.0389	0.0361
1	-0.2867	0.2849	-0.0409	0.0344	0.0358
2	-0.2442	0.2838	-0.0386	0.0291	0.0356
3	-0.1943	0.2784	-0.0338	0.0231	0.0352
5	-0.0956	0.2709	-0.0261	0.0115	0.0337
7	-0.0478	0.2623	-0.0157	-0.0056	0.0325
10	-0.2622	0.2645	-0.0146	-0.0318	0.0334
20	-0.2177	0.2408	0.0593	-0.0294	0.0291
$M = 1.10$					
-3	-0.5245	0.2905	-0.0609	0.0622	0.0368
-2	-0.4494	0.2791	-0.0619	0.0530	0.0355
-1	-0.3713	0.2249	-0.0558	0.0435	0.0349
0	-0.3137	0.2749	-0.0467	0.0377	0.0349
1	-0.2633	0.2759	-0.0384	0.0317	0.0343
2	-0.2252	0.2749	-0.0341	0.0270	0.0348
3	-0.1707	0.2707	-0.0334	0.0208	0.0375
5	-0.0720	0.2645	-0.0210	0.0088	0.0648
7	-0.0720	0.2562	-0.0142	-0.0089	0.0630
10	-0.2756	0.2624	-0.0154	-0.0336	0.0652
20	-0.2160	0.2385	0.0569	-0.0285	0.0569

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(h) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.50$

α , deg	c_L	c_D	c_M	c_l	c_n	α , deg	c_L	c_D	c_M	c_l	c_n
M = 0.60											
-3	-0.8280	0.1710	0.0439	0.0977	0.0215	-3	-0.7364	0.2434	0.0317	0.0842	0.0282
-2	-0.7832	0.1607	0.0577	0.0925	0.0203	-2	-0.6853	0.2211	0.0324	0.0780	0.0260
-1	-0.7405	0.1545	0.0754	0.0872	0.0190	-1	-0.6110	0.2070	0.0269	0.0694	0.0245
0	-0.6897	0.1463	0.0842	0.0810	0.0185	0	-0.5622	0.2023	0.0194	0.0643	0.0240
1	-0.6408	0.1442	0.0856	0.0752	0.0182	1	-0.3798	0.1888	0.0096	0.0509	0.0229
2	-0.5798	0.1360	0.0868	0.0677	0.0173	2	-0.3659	0.1817	0.0352	0.0429	0.0220
3	-0.5188	0.1339	0.0936	0.0600	0.0166	3	-0.2729	0.1782	0.0366	0.0327	0.0215
5	-0.3784	0.1236	0.1006	0.0430	0.0153	5	-0.1045	0.1658	0.0555	0.0132	0.0201
7	-0.2034	0.1133	0.1011	0.0220	0.0141	7	0.0987	0.1658	0.0607	-0.0102	0.0202
10	-0.1526	0.1339	0.0733	-0.0189	0.0167	10	0.3694	0.1964	0.0500	-0.0447	0.0245
20	-0.5798	0.3028	-0.0113	-0.0792	0.0398						
M = 0.80											
-2	-0.8555	0.1956	0.0784	0.0973	0.0223	-3	-0.6997	0.2418	0.0238	0.0802	0.0280
-1	-0.4415	0.1711	0.0061	0.0837	0.0205	-2	-0.6553	0.2204	0.0196	0.0751	0.0259
0	-0.6347	0.1642	0.0834	0.0648	0.0198	-1	-0.5776	0.2075	0.0099	0.0653	0.0247
1	-0.5781	0.1558	0.0878	0.0680	0.0194	0	-0.4942	0.1957	0.0071	0.0566	0.0235
3	-0.4650	0.1439	0.1084	0.0550	0.0178	1	-0.4165	0.1884	0.0039	0.0473	0.0231
5	-0.3063	0.1292	0.1167	0.0359	0.0160	2	-0.3088	0.1850	0.0073	0.0358	0.0228
7	-0.1104	0.1229	0.1194	0.0132	0.0152	3	-0.2255	0.1799	0.0157	0.0262	0.0220
10	-0.2304	0.1460	0.0860	-0.0285	0.0189	5	-0.0522	0.1726	0.0319	0.0069	0.0211
20	-0.5864	0.3025	-0.0062	-0.0778	0.0384	7	0.1833	0.1754	0.0346	-0.0206	0.0214
						10	0.4276	0.2064	0.0183	-0.0520	0.0265
M = 0.85											
-2	-0.8421	0.2000	0.0711	0.0953	0.0235	-3	-0.6877	0.2335	0.0225	0.0791	0.0274
-1	-0.7462	0.1895	0.0757	0.0847	0.0225	-2	-0.6236	0.2146	0.0143	0.0718	0.0257
0	-0.6504	0.1777	0.0894	0.0752	0.0213	-1	-0.5574	0.2011	0.0133	0.0640	0.0242
1	-0.5817	0.1771	0.0971	0.0678	0.0212	0	-0.4837	0.1892	0.0104	0.0557	0.0229
2	-0.5182	0.1672	0.1026	0.0601	0.0202	1	-0.4111	0.1800	0.0064	0.0474	0.0222
3	-0.4495	0.1541	0.1109	0.0528	0.0189	2	-0.3097	0.1768	0.0087	0.0360	0.0218
5	-0.2682	0.1377	0.1236	0.0313	0.0169	3	-0.2189	0.1730	0.0151	0.0263	0.0212
7	-0.0518	0.1312	0.1183	0.0067	0.0162	5	-0.0320	0.1660	0.0313	0.0044	0.0201
10	-0.2448	0.1489	0.0908	-0.0303	0.0193	7	0.2029	0.1724	0.0265	-0.0313	0.0211
20	-0.5920	0.2951	-0.0081	-0.0790	0.0385	10	0.4196	0.2011	0.0125	-0.0513	0.0257
M = 0.90											
-2	-0.7960	0.2108	0.0603	0.0901	0.0248	-3	-0.6415	0.2200	0.0213	0.0750	0.0259
-1	-0.7029	0.1953	0.1269	0.0799	0.0233	-2	-0.5836	0.2053	0.0159	0.0680	0.0244
0	-0.6001	0.1860	0.0637	0.0689	0.0222	-1	-0.5008	0.1880	0.0117	0.0577	0.0227
1	-0.4935	0.1817	0.0609	0.0573	0.0223	0	-0.4449	0.1797	0.0099	0.0514	0.0219
2	-0.4286	0.1426	0.0754	0.0501	0.0213	1	-0.3621	0.1723	0.0101	0.0420	0.0211
3	-0.3429	0.1643	0.0811	0.0408	0.0202	2	-0.2587	0.1702	0.0110	0.0310	0.0209
5	-0.1776	0.1519	0.0964	0.0216	0.0186	3	-0.1811	0.1645	0.0184	0.0223	0.0200
7	-0.0490	0.1488	0.0970	-0.0048	0.0181	5	0.0310	0.1608	0.0308	-0.0028	0.0194
10	-0.3123	0.1693	0.0871	-0.0378	0.0215	7	0.2328	0.1713	0.0253	-0.0272	0.0210
20	-0.6319	0.3088	-0.0118	-0.0830	0.0396	10	0.4428	0.2043	0.0071	-0.0532	0.0259
M = 1.10											
-3	-0.6415	0.2200	0.0213	0.0750	0.0259						
-2	-0.5836	0.2053	0.0159	0.0680	0.0244						
-1	-0.5008	0.1880	0.0117	0.0577	0.0227						
0	-0.4449	0.1797	0.0099	0.0514	0.0219						
1	-0.3621	0.1723	0.0101	0.0420	0.0211						
2	-0.2587	0.1702	0.0110	0.0310	0.0209						
3	-0.1811	0.1645	0.0184	0.0223	0.0200						
5	0.0310	0.1608	0.0308	-0.0028	0.0194						
7	0.2328	0.1713	0.0253	-0.0272	0.0210						
10	0.4428	0.2043	0.0071	-0.0532	0.0259						

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TABLE IV: - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(I) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3 -0.7884 .2016 .0400 .0928 .0261 -2 -0.7075 .1924 .0445 .0842 .0247 -1 -0.6206 .1873 .0513 .0750 .0238 0 -0.5701 .1842 .0566 .0695 .0235 1 -0.5317 .1811 .0631 .0639 .0229 2 -0.4872 .1791 .0692 .0593 .0225 3 -0.4447 .1740 .0793 .0538 .0219 5 -0.3336 .1648 .0925 .0400 .0206 7 -0.2022 .1545 .1037 .0246 .0194 10 .0364 .1668 .1014 -0.0037 .0136 20 .3032 .2712 .0645 -0.0443 .0344											
$M = 0.95$											
-1 -0.6581 .2496 .0358 .0772 .0315 0 -0.5311 .2437 .0221 .0628 .0308 1 -0.4445 .2426 .0351 .0532 .0306 2 -0.3925 .2250 .0664 .0479 .0287 3 -0.2886 .2221 .0556 .0356 .0281 5 -0.1559 .2028 .0919 .0219 .0258 7 .0496 .2063 .0857 -0.0030 .0258 10 .2540 .2233 .0789 -0.0302 .0287 20 .3925 .3039 .0678 -0.0525 .0368											
$M = 0.80$											
-3 -0.7730 .2158 .0206 .0898 .0267 -2 -0.6853 .2047 .0323 .0804 .0255 -1 -0.6099 .1978 .0422 .0725 .0248 0 -0.5482 .1936 .0539 .0656 .0241 1 -0.4893 .1887 .0632 .0590 .0238 2 -0.4413 .1839 .0696 .0533 .0235 3 -0.3906 .1804 .0809 .0479 .0229 5 -0.2467 .1672 .0915 .0304 .0213 7 -0.0411 .1645 .0945 .0069 .0209 10 .1549 .1839 .0846 -0.0192 .0238 20 .3454 .2783 .0803 -0.0479 .0359											
$M = 1.00$											
-2 -0.6955 .2599 .0242 .0807 .0323 -1 -0.6182 .2454 .0244 .0718 .0347 0 -0.5078 .2359 .0199 .0601 .0299 1 -0.4195 .2319 .0299 .0504 .0296 2 -0.3511 .2264 .0399 .0425 .0288 3 -0.2650 .2163 .0467 .0332 .0274 5 -0.1104 .2085 .0644 .0156 .0265 7 .0994 .2096 .0617 -0.0101 .0265 10 .3643 .2431 .0467 -0.0426 .0314 20 .3754 .2795 .0715 -0.0482 .0344											
$M = 0.85$											
-3 -0.8316 .2294 .0389 .0955 .0280 -2 -0.7003 .2118 .0346 .0818 .0263 -1 -0.6205 .2033 .0408 .0736 .0256 0 -0.5497 .1988 .0521 .0652 .0251 1 -0.4956 .1968 .0618 .0593 .0252 2 -0.4377 .1909 .0735 .0530 .0243 3 -0.3733 .1844 .0865 .0460 .0236 5 -0.2317 .1727 .0989 .0290 .0221 7 -0.0129 .1701 .0963 .0031 .0216 10 .1802 .1909 .0852 -0.0219 .0246 20 .3604 .2867 .0802 -0.0503 .0367											
$M = 1.05$											
-2 -0.6685 .2508 .0262 .0787 .0312 -1 -0.5942 .2363 .0257 .0707 .0297 0 -0.4987 .2256 .0217 .0602 .0286 1 -0.3979 .2218 .0237 .0489 .0284 2 -0.3342 .2186 .0341 .0421 .0278 3 -0.2515 .2079 .0447 .0319 .0263 5 -0.0849 .2009 .0606 .0126 .0252 7 .1538 .2057 .0528 -0.0155 .0260 10 .3554 .2363 .0432 -0.0410 .0303											
$M = 0.90$											
-2 -0.7912 .2095 .0592 .0922 .0299 -1 -0.6939 .2403 .0665 .0824 .0299 0 -0.5904 .2219 .0727 .0700 .0281 1 -0.5295 .2219 .0865 .0635 .0283 2 -0.4686 .2126 .0975 .0566 .0270 3 -0.3920 .2034 .1081 .0477 .0259 5 -0.2313 .1849 .1193 .0296 .0236 7 -0.0122 .1818 .1075 .0028 .0229 10 .1765 .1984 .0953 .0026 .0255 20 .1643 .3106 .1275 -0.0550 .0384											
$M = 1.10$											
-2 -0.6306 .2407 .0299 .0751 .0298 -1 -0.5649 .2272 .0267 .0668 .0285 0 -0.4724 .2184 .0227 .0567 .0275 1 -0.3852 .2158 .1221 .0468 .0272 2 -0.3081 .2111 .1143 .0390 .0264 3 -0.2363 .2028 .1032 .0306 .0252 5 -0.0411 .1976 .0688 .0083 .0243 7 .1541 .2028 .0115 -0.0151 .0251 10 .3574 .2340 -0.0489 -0.0404 .0296											

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TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(j) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
$M = 0.60$											
-3	-0.6211	0.2261	0.0247	0.0750	0.0282	-2	-0.6700	0.2817	0.0370	0.0791	0.0345
-2	-0.5561	0.2261	0.0313	0.0679	0.0284	-1	-0.5495	0.2788	0.0867	0.0659	0.0682
-1	-0.5115	0.2261	0.0426	0.0629	0.0281	0	-0.4683	0.2670	0.0506	0.0571	0.0333
0	-0.4749	0.2250	0.0494	0.0589	0.0281	1	-0.4046	0.2670	0.0789	0.0500	0.0333
1	-0.4384	0.2209	0.0541	0.0537	0.0278	2	-0.3408	0.2494	0.0724	0.0430	0.0325
2	-0.3958	0.2178	0.0629	0.0491	0.0273	3	-0.2655	0.2465	0.0671	0.0342	0.0308
3	-0.3471	0.2158	0.0737	0.0435	0.0266	5	-0.0997	0.2406	0.0545	0.0166	0.0316
5	-0.2212	0.2004	0.0819	0.0290	0.0248	7	0.0591	0.2289	0.0327	-0.0037	0.0284
7	-0.0995	0.1952	0.0926	0.0142	0.0242	10	0.2539	0.2465	0.0022	-0.0294	0.0311
10	0.1340	0.2189	0.0818	-0.0290	0.0269	20	0.4799	0.3404	-0.0252	-0.0626	0.0442
20	0.3511	0.3134	0.0837	-0.0475	0.0393						
$M = 0.80$											
$M = 0.80$											
-3	-0.6318	0.2314	0.0067	0.0751	0.0292	-2	-0.6516	0.2918	0.0293	0.0765	0.0365
-2	-0.5630	0.2265	0.0195	0.0672	0.0284	-1	-0.5197	0.2816	0.0267	0.0630	0.0354
-1	-0.5052	0.2230	0.0299	0.0607	0.0282	0	-0.4366	0.2782	0.0379	0.0529	0.0350
0	-0.4419	0.2230	0.0431	0.0542	0.0278	1	-0.3845	0.2748	0.0475	0.0470	0.0345
1	-0.3978	0.2174	0.0465	0.0490	0.0278	2	-0.3147	0.2692	0.0563	0.0394	0.0336
2	-0.3497	0.2160	0.0578	0.0433	0.0273	3	-0.2393	0.2580	0.0648	0.0310	0.0322
3	-0.2946	0.2112	0.0668	0.0364	0.0267	5	-0.0875	0.2490	0.0826	0.0133	0.0311
5	-0.1500	0.1986	0.0774	0.0207	0.0253	7	0.1119	0.2524	0.0753	-0.0103	0.0313
7	0.0151	0.1986	0.0826	0.0008	0.0249	10	0.3557	0.2838	0.0636	-0.0408	0.0357
10	0.2147	0.2230	0.0702	-0.0243	0.0285	20	0.4665	0.3276	0.0717	-0.0600	0.0385
20	0.4488	0.3345	0.0678	-0.0599	0.0426						
$M = 0.85$											
$M = 0.85$											
-3	-0.6570	0.2390	0.0061	0.0775	0.0295	-2	-0.6262	0.2792	0.0281	0.0737	0.0351
-2	-0.5807	0.2292	0.0151	0.0686	0.0288	-1	-0.5154	0.2696	0.0243	0.0622	0.0338
-1	-0.4966	0.2239	0.0292	0.0600	0.0280	0	-0.4302	0.2684	0.0316	0.0526	0.0333
0	-0.4384	0.2226	0.0409	0.0539	0.0280	1	-0.3557	0.2642	0.0466	0.0444	0.0328
1	-0.5432	0.2017	0.2561	0.0484	0.0280	2	-0.2971	0.2598	0.0537	0.0371	0.0322
2	-0.3350	0.2174	0.0565	0.0421	0.0274	3	-0.2204	0.2490	0.0608	0.0287	0.0310
3	-0.2703	0.2115	0.0665	0.0362	0.0266	5	-0.0628	0.2426	0.0756	0.0108	0.0299
5	-0.1345	0.2030	0.0816	0.0189	0.0254	7	0.1289	0.2448	0.0677	-0.0123	0.0304
7	0.0440	0.2030	0.0788	-0.0022	0.0254	10	0.3418	0.2750	0.0629	-0.0398	0.0344
10	0.2380	0.2292	0.0671	-0.0368	0.0292	20	0.4483	0.3180	0.0628	-0.0584	0.0310
20	0.4772	0.3254	0.0677	-0.0621	0.0436						
$M = 0.90$											
$M = 0.90$											
-3	-0.7189	0.2569	0.0171	0.0835	0.0322	-2	-0.6068	0.2706	0.0278	0.0717	0.0340
-2	-0.6064	0.2445	0.0185	0.0730	0.0304	-1	-0.4788	0.2602	0.0265	0.0582	0.0326
-1	-0.5123	0.2352	0.0289	0.0621	0.0295	0	-0.4014	0.2570	0.0340	0.0493	0.0320
0	-0.4511	0.2321	0.0444	0.0546	0.0290	1	-0.3292	0.2538	0.0476	0.0406	0.0315
1	-0.3986	0.2321	0.0507	0.0491	0.0293	2	-0.2673	0.2476	0.0556	0.0336	0.0307
2	-0.3350	0.2259	0.0595	0.0416	0.0283	3	-0.1744	0.2404	0.0635	0.0238	0.0296
3	-0.2543	0.2166	0.0675	0.0320	0.0271	5	-0.0196	0.2372	0.0730	0.0053	0.0288
5	-0.1271	0.2073	0.0836	0.0175	0.0260	7	0.1507	0.2404	0.0657	-0.0158	0.0296
7	0.0562	0.2117	0.0806	-0.0037	0.0262	10	0.3467	0.2686	0.0600	-0.0397	0.0336
10	0.2518	0.2352	0.0670	-0.0199	0.0297						
20	0.4964	0.3528	0.0652	-0.0643	0.0433						
$M = 1.00$											
$M = 1.00$											
-2	-0.6516	0.2918	0.0293	0.0765	0.0365	-2	-0.6516	0.2918	0.0293	0.0765	0.0365
-1	-0.5197	0.2816	0.0267	0.0630	0.0354	-1	-0.5197	0.2816	0.0267	0.0630	0.0354
0	-0.4366	0.2782	0.0379	0.0529	0.0350	0	-0.4366	0.2782	0.0379	0.0529	0.0350
1	-0.3845	0.2748	0.0475	0.0470	0.0345	1	-0.3845	0.2748	0.0475	0.0470	0.0345
2	-0.3147	0.2692	0.0563	0.0394	0.0336	2	-0.3147	0.2692	0.0563	0.0394	0.0336
3	-0.2393	0.2580	0.0648	0.0310	0.0322	3	-0.2393	0.2580	0.0648	0.0310	0.0322
5	-0.0875	0.2490	0.0826	0.0133	0.0311	5	-0.0875	0.2490	0.0826	0.0133	0.0311
7	0.1119	0.2524	0.0753	-0.0103	0.0313	7	0.1119	0.2524	0.0753	-0.0103	0.0313
10	0.3557	0.2838	0.0636	-0.0408	0.0357	10	0.3557	0.2838	0.0636	-0.0408	0.0357
20	0.4665	0.3276	0.0717	-0.0600	0.0385	20	0.4665	0.3276	0.0717	-0.0600	0.0385
$M = 1.05$											
$M = 1.05$											
-2	-0.6262	0.2792	0.0281	0.0737	0.0351	-2	-0.6262	0.2792	0.0281	0.0737	0.0351
-1	-0.5154	0.2696	0.0243	0.0622	0.0338	-1	-0.5154	0.2696	0.0243	0.0622	0.0338
0	-0.4302	0.2684	0.0316	0.0526	0.0333	0	-0.4302	0.2684	0.0316	0.0526	0.0333
1	-0.3557	0.2642	0.0466	0.0444	0.0328	1	-0.3557	0.2642	0.0466	0.0444	0.0328
2	-0.2971	0.2598	0.0537	0.0371	0.0322	2	-0.2971	0.2598	0.0537	0.0371	0.0322
3	-0.2204	0.2490	0.0608	0.0287	0.0310	3	-0.2204	0.2490	0.0608	0.0287	0.0310
5	-0.0628	0.2426	0.0756	0.0108	0.0299	5	-0.0628	0.2426	0.0756	0.0108	0.0299
7	0.1289	0.2448	0.0677	-0.0123	0.0304	7	0.1289	0.2448	0.0677	-0.0123	0.0304
10	0.3418	0.2750	0.0629	-0.0398	0.0344	10	0.3418	0.2750	0.0629	-0.0398	0.0344
20	0.4483	0.3180	0.0628	-0.0584	0.0310	20	0.4483	0.3180	0.0628	-0.0584	0.0310
$M = 1.10$											
$M = 1.10$											
-2	-0.6068	0.2706	0.0278	0.0717	0.0340	-2	-0.6068	0.2706	0.0278	0.0717	0.0340
-1	-0.4788	0.2602	0.0265	0.0582	0.0326	-1	-0.4788	0.2602	0.0265	0.0582	0.0326
0	-0.4014	0.2570	0.0340	0.0493	0.0320	0	-0.4014	0.2570	0.0340	0.0493	0.0320
1	-0.3292	0.2538	0.0476	0.0406	0.0315	1	-0.3292	0.2538	0.0476	0.0406	0.0315
2	-0.2673	0.2476	0.0556	0.0336	0.0307	2	-0.2673	0.2476	0.0556	0.0336	0.0307
3	-0.1744	0.2404	0.0635	0.0238	0.0296	3	-0.1744	0.2404	0.0635	0.0238	0.0296
5	-0.0196	0.2372	0.0730	0.0053	0.0288	5	-0.0196	0.2372	0.0730	0.0053	0.0288
7	0.1507	0.2404	0.0657	-0.0158	0.0296	7	0.1507	0.2404	0.0657	-0.0158	0.0296
10	0.3467	0.2686	0.0600	-0.0397	0.0336	10	0.3467	0.2686	0.0600	-0.0397	0.0336

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(k) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α, deg	c_L	c_D	c_M	c_l	c_n	α, deg	c_L	c_D	c_M	c_l	c_n													
$M = 0.60$																								
-3	-0.8803	0.1805	0.1321	0.1035	0.0227	-2	-0.7666	0.2123	0.1641	0.0866	0.0271													
-2	-0.7744	0.1630	0.1351	0.0911	0.0207	-1	-0.6757	0.1946	0.1599	0.0760	0.0254													
-1	-0.6766	0.1527	0.1299	0.0809	0.0195	0	-0.5534	0.1828	0.1553	0.0645	0.0240													
0	-0.6195	0.1465	0.1378	0.0740	0.0186	1	-0.4544	0.1793	0.1503	0.0538	0.0236													
1	-0.5706	0.1444	0.1391	0.0685	0.0185	2	-0.3379	0.1604	0.1498	0.0414	0.0211													
2	-0.5196	0.1393	0.1429	0.0617	0.0178	3	-0.2214	0.1622	0.1526	0.0289	0.0211													
3	-0.4483	0.1341	0.1500	0.0536	0.0171	5	0.0117	0.1545	0.1501	0.0025	0.0200													
5	-0.2853	0.1228	0.1528	0.0338	0.0149	7	0.2621	0.1722	0.1155	-0.0278	0.0226													
7	-0.1019	0.1186	0.1528	0.0136	0.0142	10	0.5243	0.2182	0.0732	-0.0615	0.0296													
10	0.1956	0.1527	0.1145	-0.0235	0.0185																			
20	0.5258	0.3023	0.0274	-0.0728	0.0315																			
$M = 0.80$																								
-3	-0.8984	0.1973	0.1245	0.1025	0.0236	$M = 1.00$																		
-2	-0.7657	0.1749	0.1221	0.0880	0.0215																			
-1	-0.6703	0.1616	0.1276	0.0782	0.0202	-1	-0.6459	0.1973	0.1562	0.0752	0.0253													
0	-0.5736	0.1539	0.1364	0.0677	0.0193	0	-0.5457	0.1832	0.1535	0.0633	0.0239													
1	-0.5211	0.1504	0.1393	0.0618	0.0192	1	-0.4399	0.1720	0.1513	0.0518	0.0225													
2	-0.4450	0.1420	0.1448	0.0534	0.0184	2	-0.3118	0.1624	0.1410	0.0379	0.0212													
3	-0.3524	0.1336	0.1482	0.0429	0.0171	3	-0.2005	0.1596	0.1461	0.0261	0.0208													
5	-0.1589	0.1259	0.1529	0.0204	0.0156	5	0.0445	0.1590	0.1287	-0.0107	0.0205													
7	0.0968	0.1308	0.1371	-0.0097	0.0162	7	0.2784	0.1748	0.0969	-0.0306	0.0229													
10	0.4077	0.1679	0.0651	-0.0492	0.0225	10	0.5234	0.2182	0.0578	-0.0621	0.0295													
20	0.6772	0.3345	-0.0110	-0.0885	0.0428																			
$M = 0.85$												$M = 1.05$												
-2	-0.7794	0.1776	0.1326	0.0893	0.0220																			
-1	-0.6625	0.1631	0.1300	0.0768	0.0206	-1	-0.6103	0.1881	0.1546	0.0715	0.0238													
0	-0.5715	0.1545	0.1382	0.0669	0.0198	0	-0.5139	0.1745	0.1567	0.0609	0.0222													
1	-0.4936	0.1473	0.1482	0.0581	0.0192	1	-0.4122	0.1604	0.1502	0.0495	0.0208													
2	-0.4027	0.1401	0.1528	0.0482	0.0182	2	-0.3105	0.1545	0.1497	0.0381	0.0200													
3	-0.2988	0.1302	0.1528	0.0363	0.0169	3	-0.1713	0.1523	0.1411	0.0234	0.0197													
5	-0.0935	0.1250	0.1587	0.0136	0.0159	5	0.0889	0.1545	0.1123	-0.0067	0.0198													
7	0.1104	0.1328	0.1503	-0.0111	0.0170	7	0.2784	0.1707	0.0832	-0.0311	0.0222													
10	0.4650	0.1723	0.0793	-0.0555	0.0238	10	0.5086	0.2119	0.0483	-0.0604	0.0280													
20	0.7274	0.3354	-0.0165	-0.0940	0.0379																			
$M = 0.90$												$M = 1.10$												
-2	-0.4126	0.2051	0.0688	0.0000	0.0255																			
-1	-0.6877	0.1890	0.1572	0.0792	0.0244	-1	-0.5808	0.1790	0.1547	0.0697	0.0230													
0	-0.5771	0.1815	0.1622	0.0681	0.0233	0	-0.4926	0.1680	0.1537	0.0590	0.0217													
1	-0.4850	0.1678	0.1651	0.0581	0.0218	1	-0.4097	0.1575	0.1481	0.0497	0.0204													
2	-0.3622	0.1504	0.1613	0.0437	0.0194	2	-0.2956	0.1486	0.1495	0.0372	0.0194													
3	-0.2640	0.1430	0.1670	0.0325	0.0184	3	-0.1607	0.1449	0.1397	0.0210	0.0189													
5	-0.0491	0.1399	0.1689	0.0082	0.0176	5	0.1037	0.1496	0.1006	-0.0080	0.0190													
7	0.3929	0.1492	-0.0058	-0.0213	0.0190	7	0.2800	0.1670	0.0757	-0.0309	0.0176													
10	1.0192	0.1865	-0.1467	-0.0599	0.0258	10	0.4926	0.2074	0.0437	-0.0577	0.0268													

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

$$(l) \quad x_S/c = 0.90; \quad \delta_S = -0.075; \quad \delta_d/\delta_S = 0.75$$

α, deg	C_L	C_D	C_M	C_l	C_n	α, deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$											
-3	-0.7985	0.2146	0.1260	0.0949	0.0273	-1	-0.6408	0.2064	0.1301	0.0758	0.0284
-2	-0.7064	0.1980	0.1295	0.0844	0.0258	0	-0.5709	0.2359	0.1596	0.0689	0.0320
-1	-0.6224	0.1866	0.1346	0.0756	0.0245	1	-0.4718	0.2300	0.1641	0.0583	0.0308
0	-0.5569	0.1835	0.1381	0.0685	0.0240	2	-0.3786	0.2153	0.1644	0.0471	0.0291
1	-0.5119	0.1804	0.1381	0.0629	0.0238	3	-0.2679	0.2064	0.1717	0.0347	0.0278
2	-0.4402	0.1741	0.1429	0.0551	0.0229	5	-0.0559	0.1887	0.1630	0.0112	0.0254
3	-0.3685	0.1690	0.1528	0.0464	0.0221	7	0.2015	0.2064	0.1294	-0.0197	0.0273
5	-0.2129	0.1565	0.1498	0.0283	0.0206	10	0.4777	0.2359	0.0905	-0.0553	0.0324
7	-0.0307	0.1555	0.1461	0.0078	0.0205						
10	0.3276	0.1970	0.0796	-0.0377	0.0253						
20	0.6450	0.3524	-0.0098	-0.0856	0.0465						
$M = 0.80$											
-3	-0.8135	0.2144	0.1147	0.0945	0.0268	$M = 1.00$					
-2	-0.7080	0.1996	0.1184	0.0834	0.0254	-1	-0.6724	0.2407	0.1698	0.0780	0.0302
-1	-0.6108	0.1898	0.1283	0.0732	0.0244	0	-0.5722	0.2266	0.1633	0.0675	0.0290
0	-0.5275	0.1827	0.1346	0.0637	0.0237	1	-0.4598	0.2170	0.1582	0.0557	0.0280
1	-0.4650	0.1785	0.1368	0.0568	0.0231	2	-0.3473	0.2036	0.1582	0.0428	0.0261
2	-0.3818	0.1708	0.1401	0.0473	0.0224	3	-0.2538	0.2001	0.1676	0.0327	0.0257
3	-0.2846	0.1630	0.1447	0.0361	0.0212	5	-0.0334	0.1961	0.1591	0.0081	0.0249
5	-0.1027	0.1546	0.1465	0.0167	0.0205	7	0.1859	0.2085	0.1275	-0.0183	0.0265
7	0.1249	0.1616	0.1272	-0.0110	0.0211	10	0.4264	0.2525	0.0976	-0.0491	0.0327
10	0.4165	0.2010	0.0565	-0.0485	0.0271						
20	0.3595	0.1827	0.0773	-0.0920	0.0458						
$M = 0.85$											
-3	-0.9306	0.2059	0.2751	0.0575	0.0267	$M = 1.05$					
-2	-0.7820	0.2243	0.1372	0.0913	0.0286	-1	-0.6634	0.2297	0.1758	0.0781	0.0303
-1	-0.6595	0.2145	0.1385	0.0783	0.0274	0	-0.5714	0.2167	0.1713	0.0680	0.0291
0	-0.5474	0.2046	0.1478	0.0664	0.0263	1	-0.4579	0.2075	0.1606	0.0560	0.0280
1	-0.3715	0.1927	0.1577	0.0468	0.0250	2	-0.3402	0.1972	0.1575	0.0431	0.0265
2	-0.2502	0.1848	0.1648	0.0331	0.0240	3	-0.2429	0.1939	0.1649	0.0325	0.0261
3	-0.0326	0.1795	0.1662	0.0093	0.0234	5	0.0075	0.1912	0.1447	0.0041	0.0251
5	0.2411	0.2013	0.1339	-0.0242	0.0258	7	0.2119	0.2069	0.1159	-0.0215	0.0272
7	0.5122	0.2375	0.0961	-0.0594	0.0318	10	0.4248	0.2475	0.0882	-0.0491	0.0328
$M = 0.90$											
$M = 1.10$											
-2	-0.7521	0.2153	0.1339	0.0872	0.0272	-1	-0.6449	0.2215	0.1752	0.0764	0.0293
-1	-0.6288	0.2054	0.1322	0.0740	0.0262	0	-0.5412	0.2089	0.1686	0.0648	0.0280
0	-0.5252	0.1960	0.1375	0.0628	0.0254	1	-0.4354	0.2000	0.1624	0.0537	0.0267
1	-0.4389	0.1929	0.1461	0.0536	0.0249	2	-0.3183	0.1921	0.1575	0.0407	0.0257
2	-0.3329	0.1779	0.1454	0.0420	0.0232	3	-0.2073	0.1890	0.1609	0.0288	0.0252
3	-0.2355	0.1716	0.1501	0.0309	0.0224	5	0.0311	0.1884	0.1355	0.0008	0.0248
5	-0.0308	0.1685	0.1550	0.0084	0.0218	7	0.2229	0.2036	0.1078	-0.0229	0.0268
7	0.2158	0.1841	0.1340	-0.0216	0.0238	10	0.4354	0.2467	0.0793	-0.0503	0.0324
10	0.4993	0.2278	0.0900	-0.0577	0.0303						

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TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Concluded

(m) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.60$					
-3	-0.7198	0.2395	0.1012	0.0853	0.0318
-2	-0.6322	0.2271	0.1058	0.0753	0.0289
-1	-0.5587	0.2220	0.1133	0.0676	0.0295
0	-0.4955	0.2168	0.1153	0.0608	0.0292
1	-0.4425	0.2147	0.1183	0.0539	0.0283
2	-0.3772	0.2065	0.1203	0.0465	0.0275
3	-0.3059	0.2013	0.1223	0.0384	0.0267
5	-0.1529	0.1941	0.1280	0.0202	0.0256
7	0.0265	0.2013	0.1253	-0.0006	0.0260
10	0.3405	0.2416	0.0597	-0.0403	0.0307
20	0.6831	0.4057	-0.0309	-0.0899	0.0523
$M = 0.80$					
-3	-0.6943	0.2311	0.0823	0.0837	0.0295
-2	-0.6224	0.2192	0.0936	0.0732	0.0285
-1	-0.5256	0.2101	0.1033	0.0631	0.0275
0	-0.4495	0.2045	0.1066	0.0536	0.0272
1	-0.3969	0.2038	0.1118	0.0475	0.0270
2	-0.3153	0.1989	0.1177	0.0381	0.0262
3	-0.2075	0.1898	0.1158	0.0267	0.0251
5	-0.0553	0.1869	0.1238	0.0090	0.0245
7	0.1632	0.2003	0.1043	-0.0166	0.0261
10	0.4163	0.2451	0.0455	-0.0503	0.0323
20	0.7220	0.4089	-0.0363	-0.0936	0.0528
$M = 0.85$					
-2	-0.6300	0.2236	0.0922	0.0741	0.0290
-1	-0.5326	0.2170	0.1031	0.0638	0.0283
0	-0.4611	0.2104	0.1080	0.0545	0.0279
1	-0.3962	0.2104	0.1144	0.0470	0.0277
2	-0.2949	0.2019	0.1199	0.0361	0.0264
3	-0.2078	0.1953	0.1191	0.0259	0.0256
5	-0.0195	0.1920	0.1271	0.0051	0.0251
7	0.1884	0.2071	0.1021	-0.0197	0.0269
10	0.4416	0.2499	0.0458	-0.0527	0.0331
20	0.7404	0.4169	-0.0406	-0.0958	0.0534
$M = 0.90$					
-2	-0.6439	0.2345	0.0959	0.0753	0.0304
-1	-0.5406	0.2239	0.1035	0.0643	0.0290
0	-0.4485	0.2190	0.1138	0.0532	0.0286
1	-0.3748	0.2177	0.1203	0.0454	0.0285
2	-0.2728	0.2053	0.1197	0.0333	0.0270
3	-0.1782	0.2003	0.1227	0.0230	0.0261
5	0.0184	0.2003	0.1302	0.0007	0.0261
7	0.2371	0.2196	0.0977	-0.0254	0.0284
10	0.4854	0.2613	0.0513	-0.0587	0.0346

α , deg	C_L	C_D	C_M	C_l	C_n
$M = 0.95$					
-2	-0.6874	0.2772	0.1252	0.0793	0.0349
-1	-0.5534	0.2625	0.1215	0.0657	0.0336
0	-0.4544	0.2566	0.1299	0.0554	0.0332
1	-0.3786	0.2507	0.1326	0.0466	0.0311
2	-0.2621	0.2389	0.1302	0.0337	0.0303
3	-0.1689	0.2271	0.1370	0.0236	0.0299
5	0.0384	0.2182	0.1329	0.0000	0.0274
7	0.2621	0.2418	0.1049	-0.0275	0.0311
10	0.5126	0.2831	0.0733	-0.0606	0.0367
$M = 1.00$					
-2	-0.6905	0.2853	0.1376	0.0801	0.0357
-1	-0.5513	0.2706	0.1240	0.0657	0.0346
0	-0.4455	0.2622	0.1254	0.0542	0.0338
1	-0.3564	0.2582	0.1301	0.0454	0.0327
2	-0.2561	0.2458	0.1320	0.0327	0.0312
3	-0.1559	0.2447	0.1432	0.0225	0.0308
5	0.0724	0.2424	0.1262	-0.0034	0.0307
7	0.2895	0.2605	0.0966	-0.0300	0.0336
10	0.5234	0.3112	0.0663	-0.0604	0.0403
$M = 1.05$					
-2	-0.6743	0.2753	0.1455	0.0786	0.0342
-1	-0.5673	0.2617	0.1264	0.0669	0.0334
0	-0.4388	0.2536	0.1208	0.0539	0.0322
1	-0.3372	0.2476	0.1281	0.0433	0.0313
2	-0.2408	0.2357	0.1285	0.0316	0.0300
3	-0.1359	0.2335	0.1347	0.0200	0.0297
5	0.0963	0.2373	0.1130	-0.0068	0.0298
7	0.3050	0.2574	0.0865	-0.0324	0.0328
10	0.5084	0.3045	0.0586	-0.0592	0.0390
$M = 1.10$					
-2	-0.6534	0.2609	0.1409	0.0777	0.0332
-1	-0.5393	0.2468	0.1301	0.0646	0.0318
0	-0.3962	0.2389	0.1194	0.0495	0.0307
1	-0.2852	0.2310	0.1211	0.0427	0.0293
2	-0.1919	0.2273	0.1300	0.0265	0.0288
3	-0.0830	0.2258	0.1294	0.0140	0.0284
5	0.1452	0.2326	0.1008	-0.0125	0.0292
7	0.3059	0.2520	0.0788	-0.0328	0.0318
10	0.5030	0.2609	0.0552	-0.0585	0.0189

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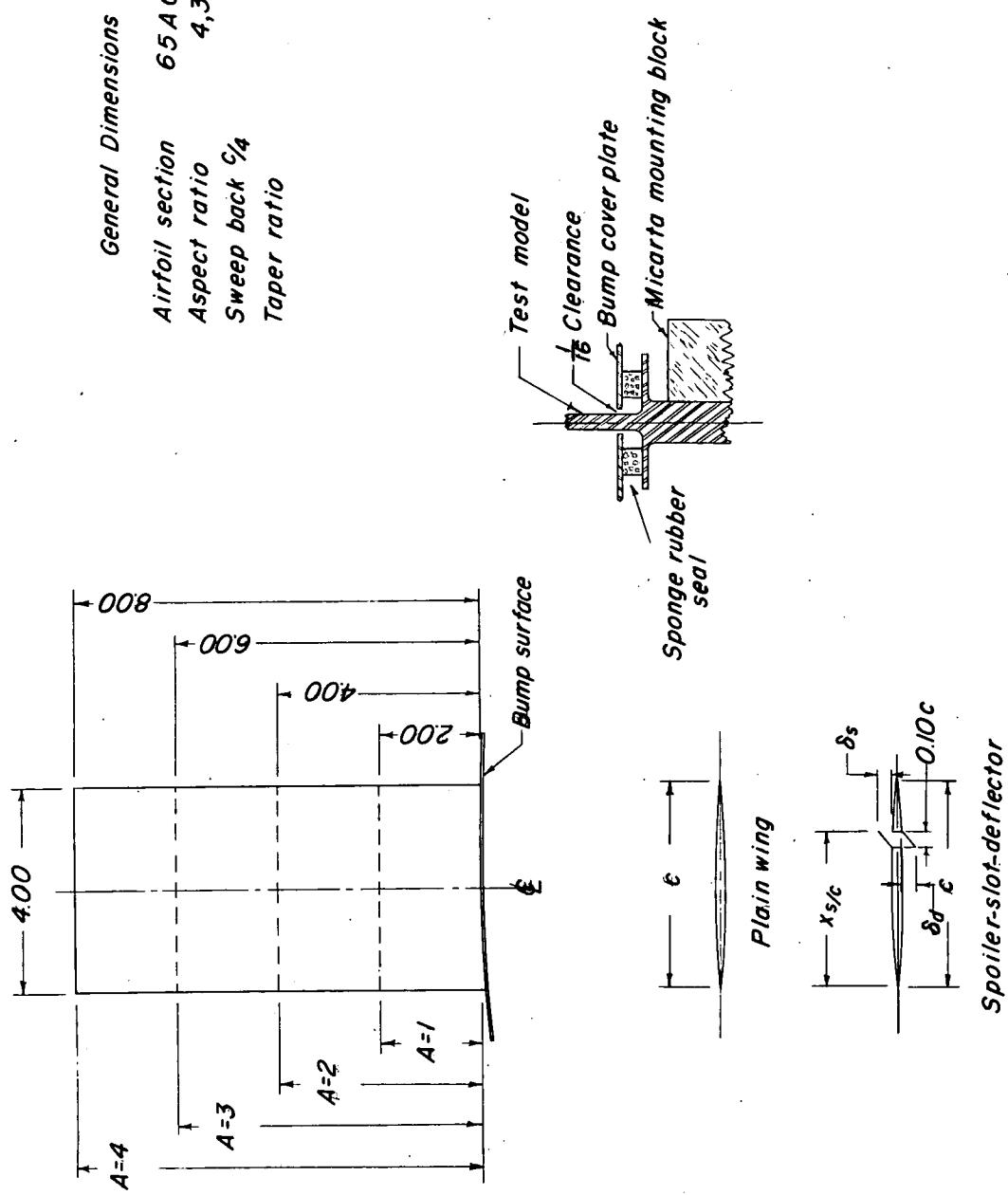


Figure 1.- Geometric characteristics of models used in investigation. All dimensions in inches unless otherwise noted.

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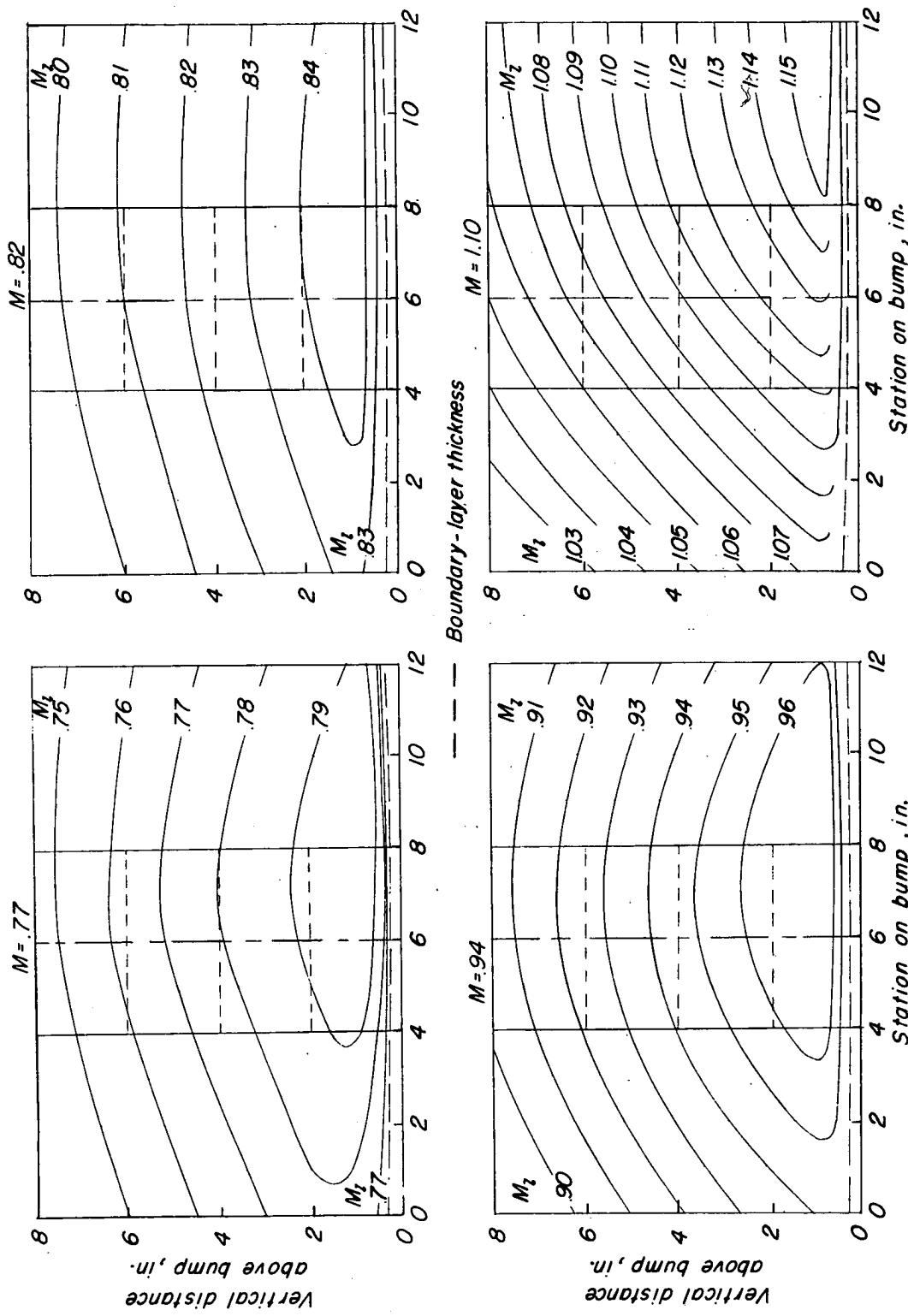


Figure 2.- Typical Mach number contours over transonic bump in region of model location.

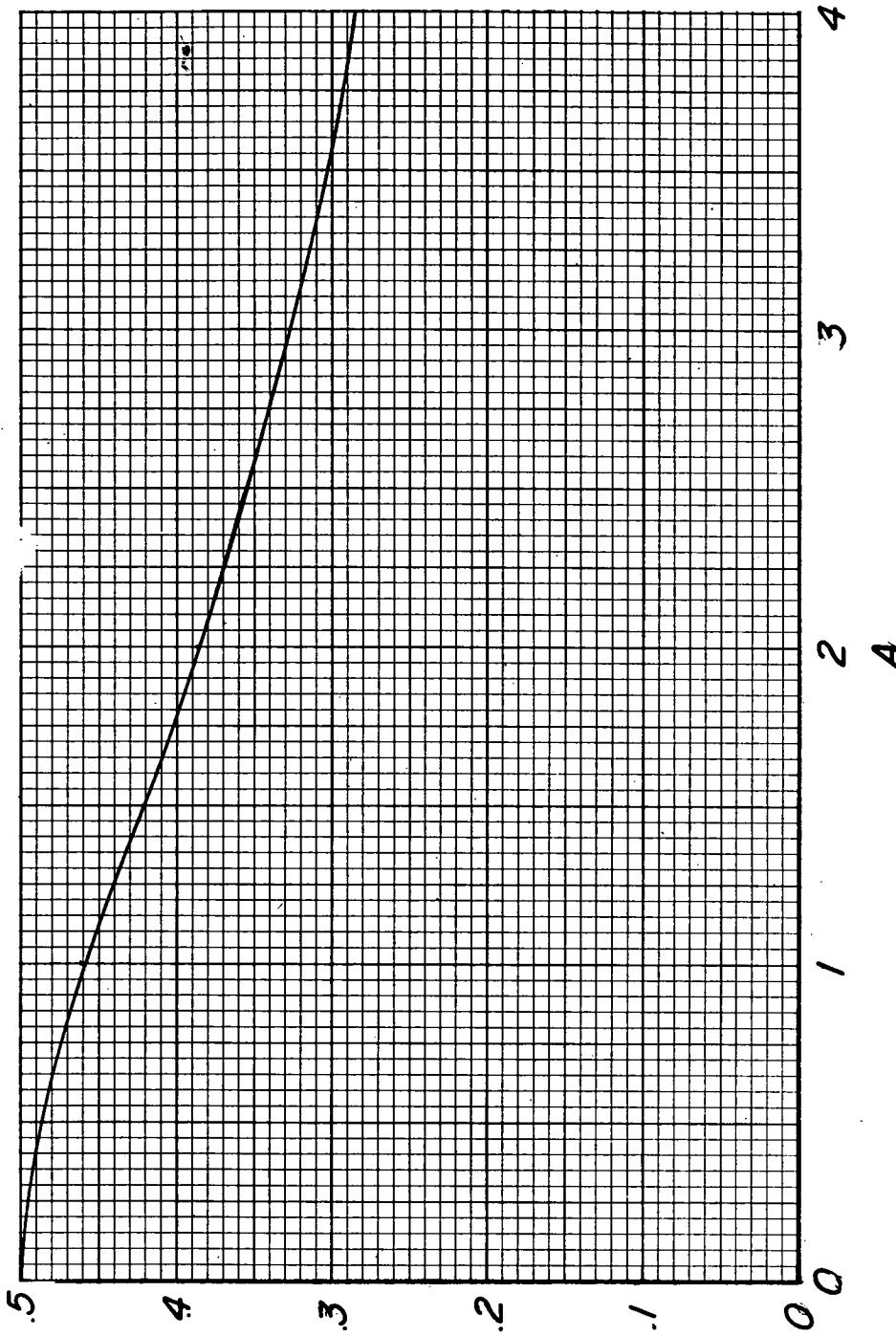
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Reflection-plane correction in
terms of symmetric C

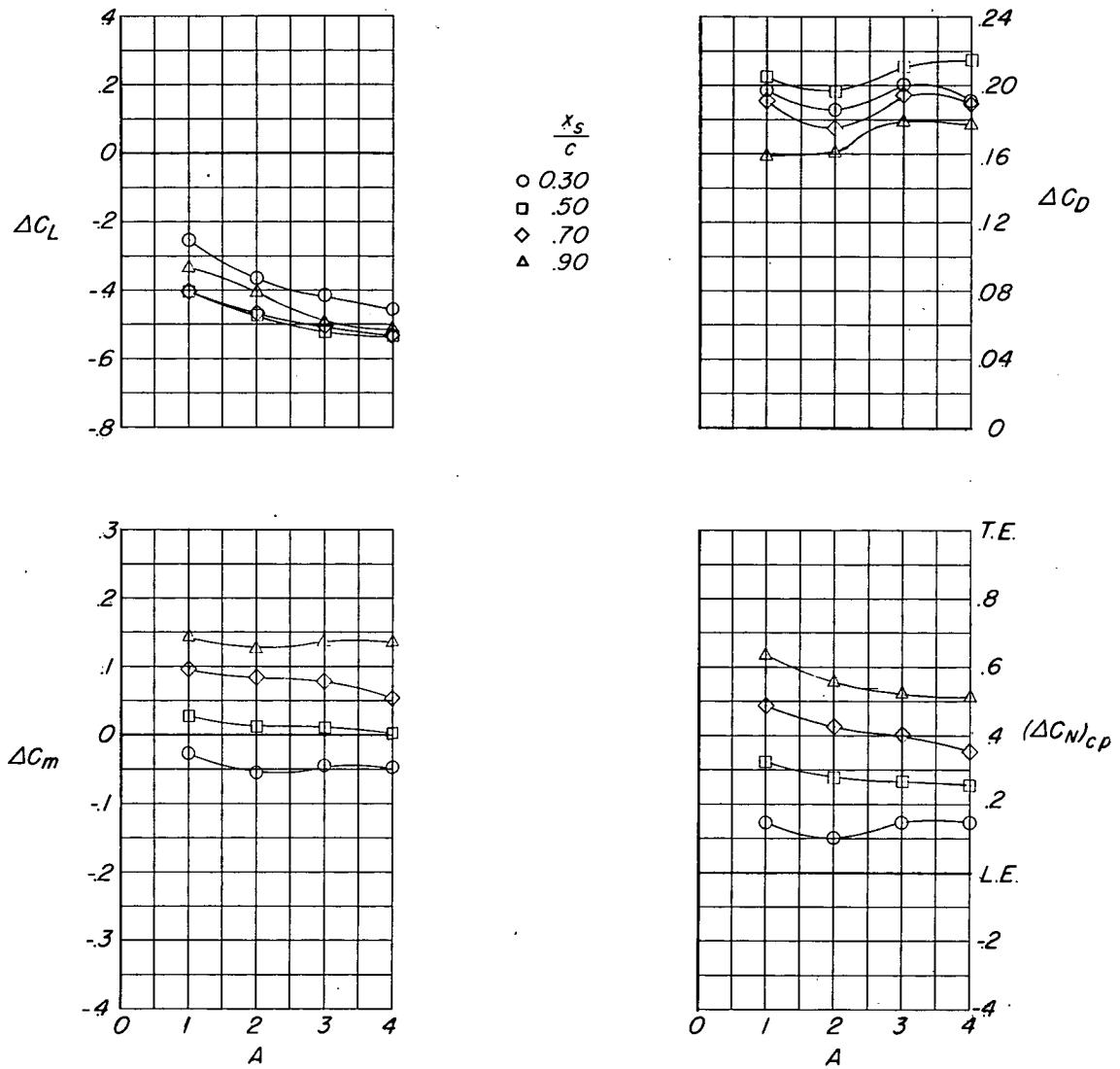
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$$(a) \quad M = 0.80; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 4.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with aspect ratio at an angle of attack of 0° for various chordwise positions of the spoiler-slot-deflector configuration.

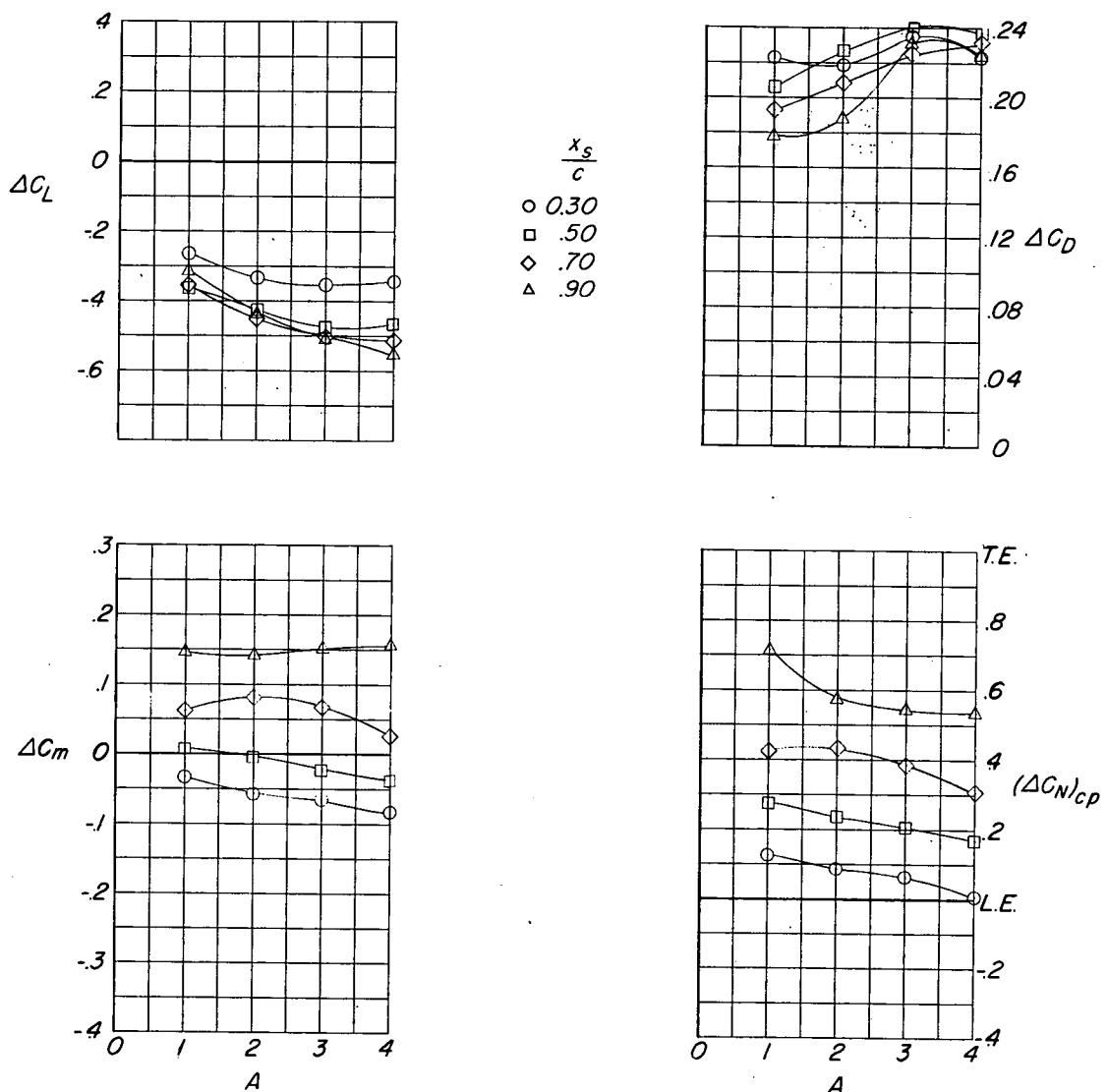
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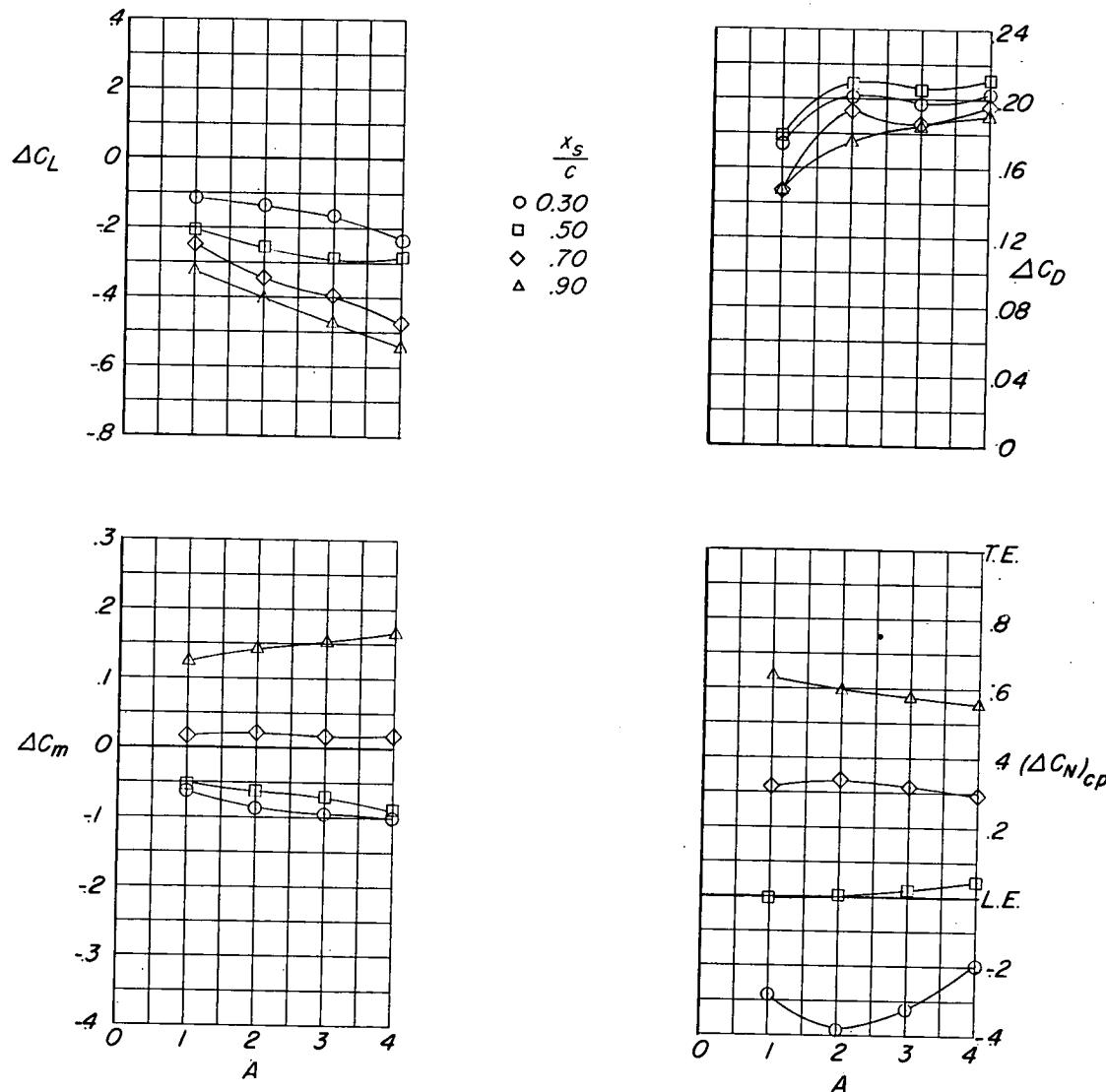
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$$(b) \quad M = 0.95; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 4.- Continued.

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(c) $M = 1.10$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 4.- Concluded.

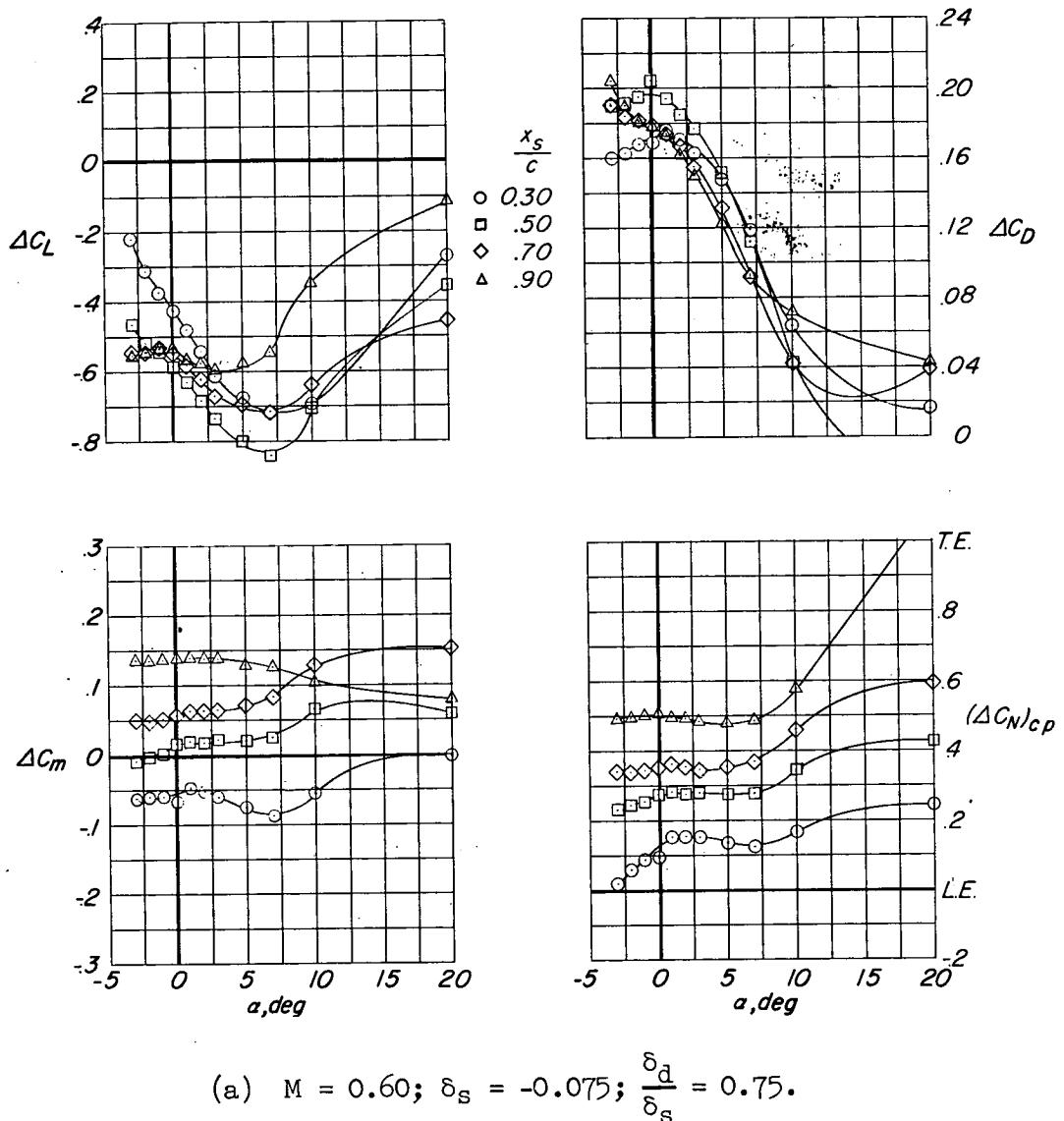
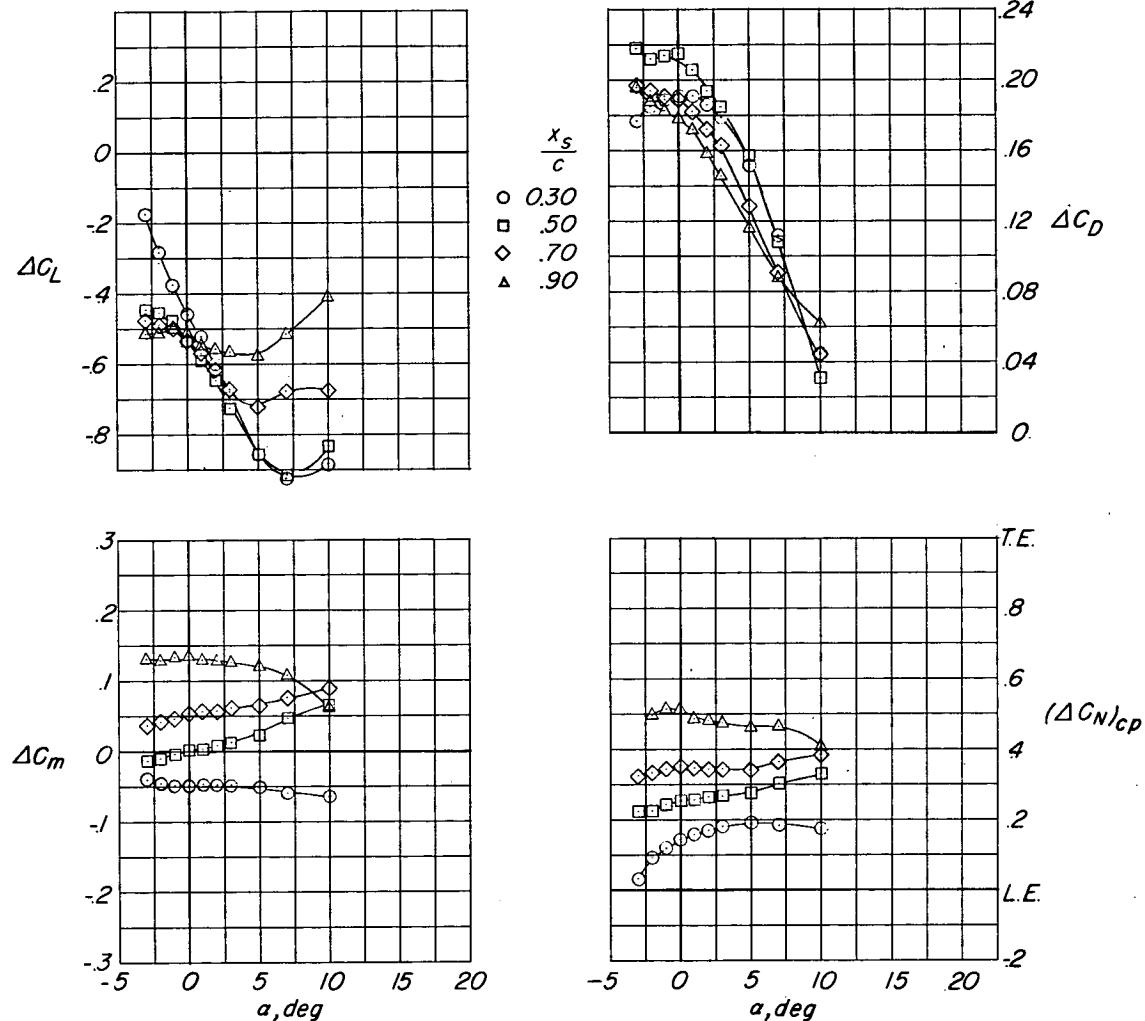
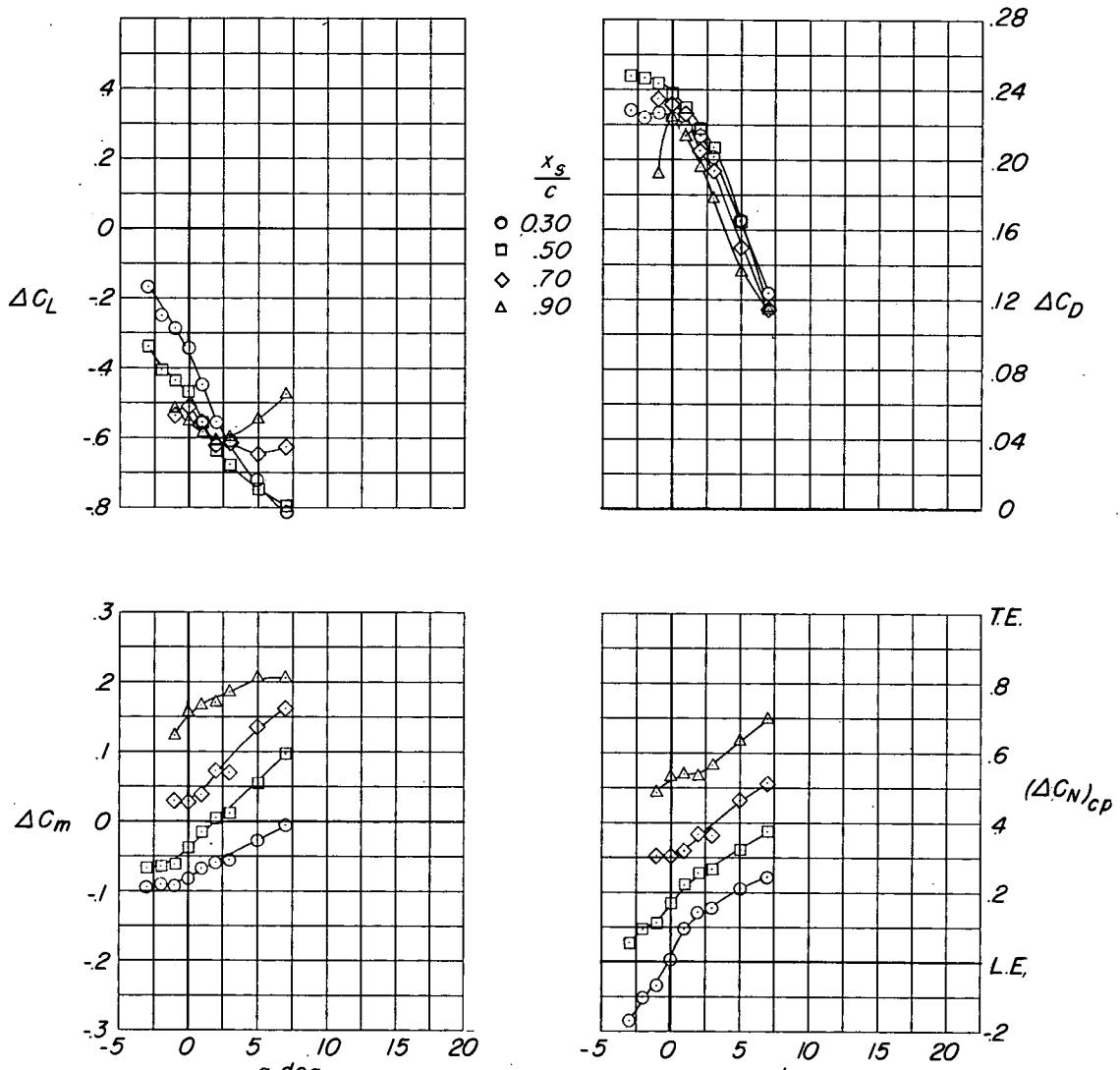


Figure 5.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with angle of attack for the aspect-ratio-4 model for various chordwise positions of the spoiler-slot-deflector configuration.



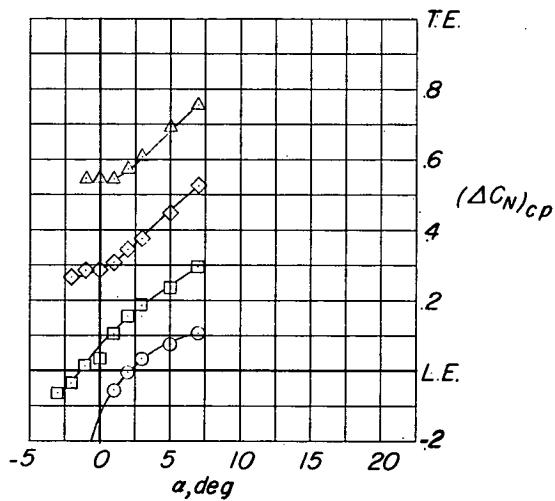
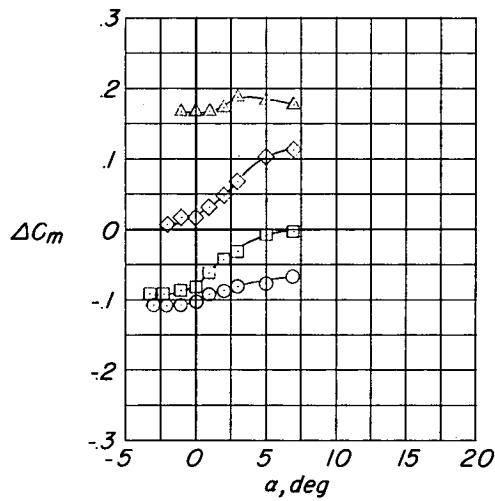
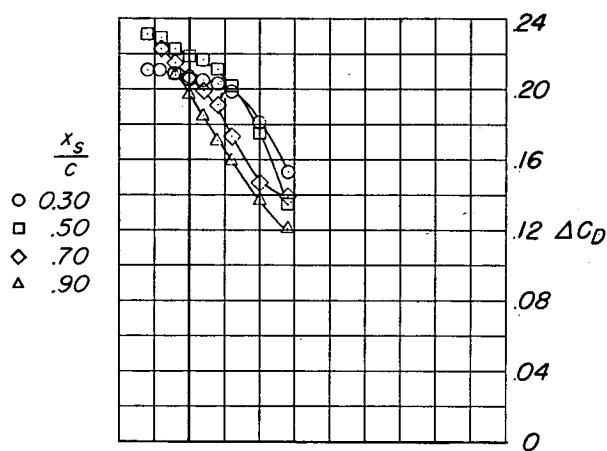
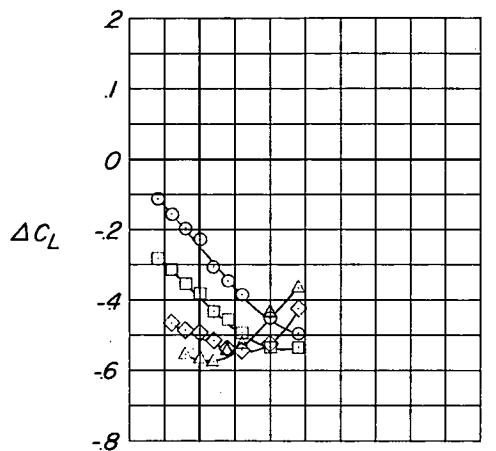
$$(b) \quad M = 0.80; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 5.- Continued.



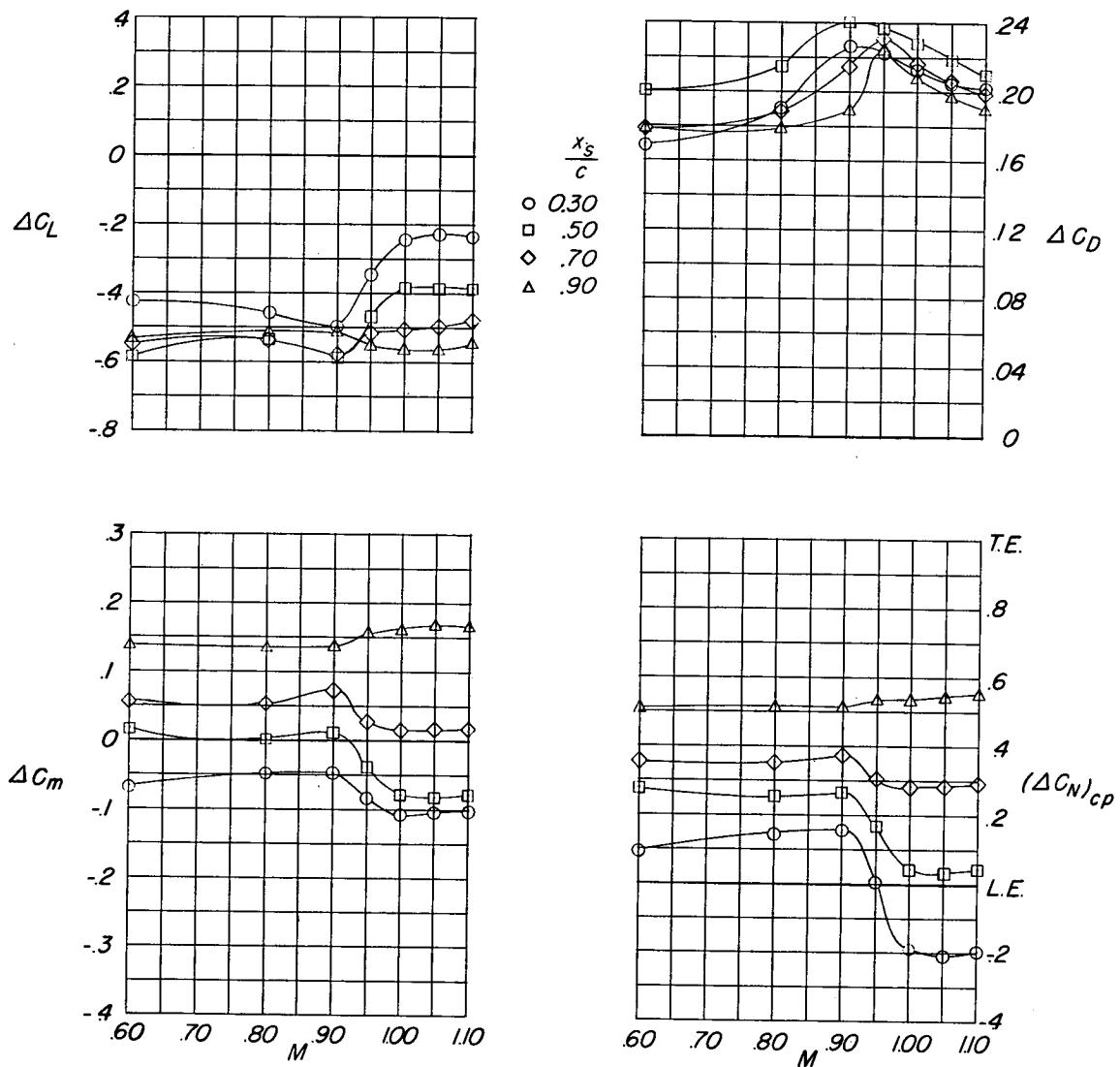
$$(c) \quad M = 0.95; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 5.- Continued.



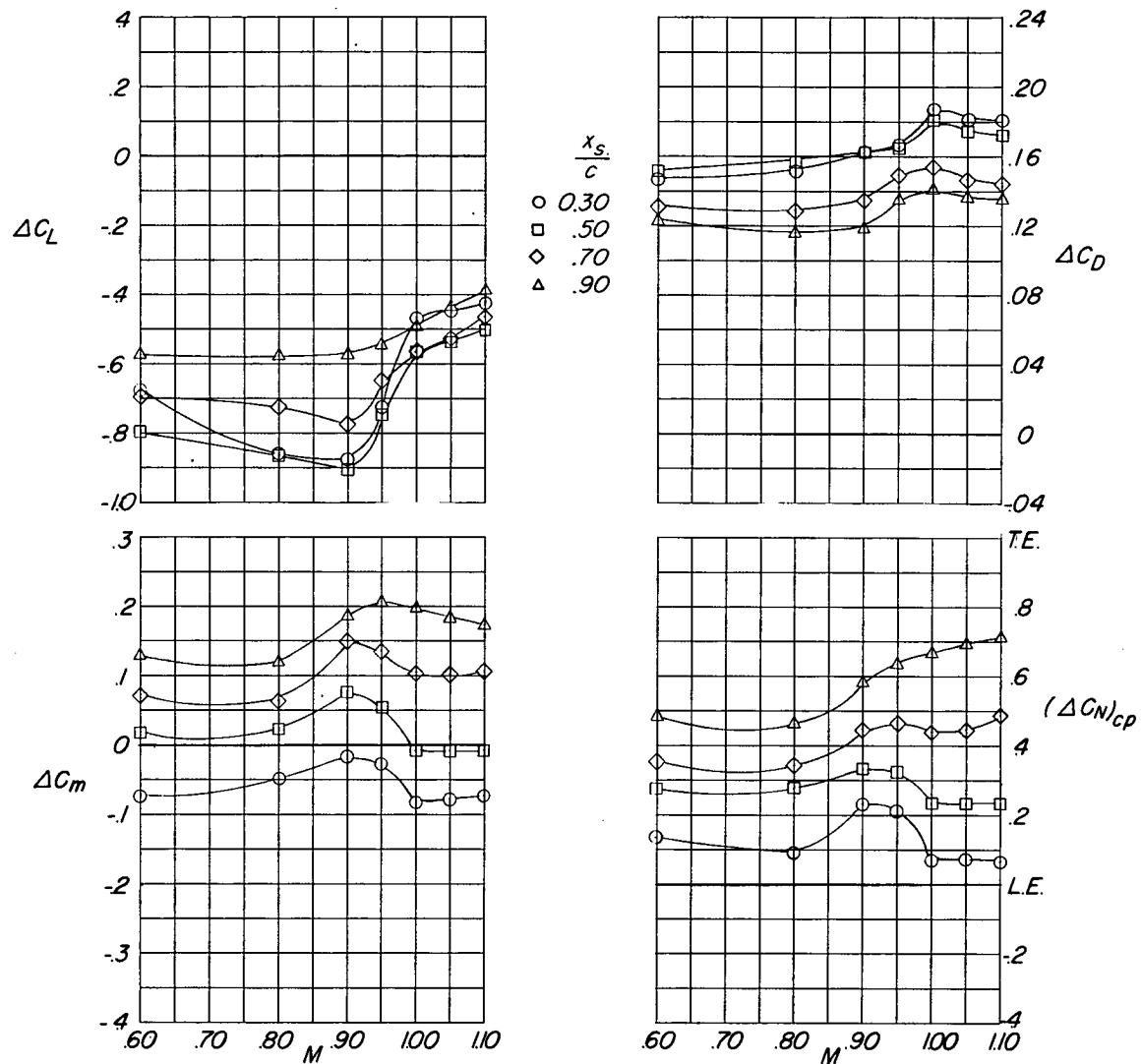
$$(d) \quad M = 1.05; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 5.- Concluded.



$$(a) \quad \alpha = 0^\circ; \delta_s = -0.075; \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 6.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with Mach number for the aspect-ratio-4 model for various chordwise positions of the spoiler-slot-deflector configuration.



$$(b) \quad \alpha = 5^\circ; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

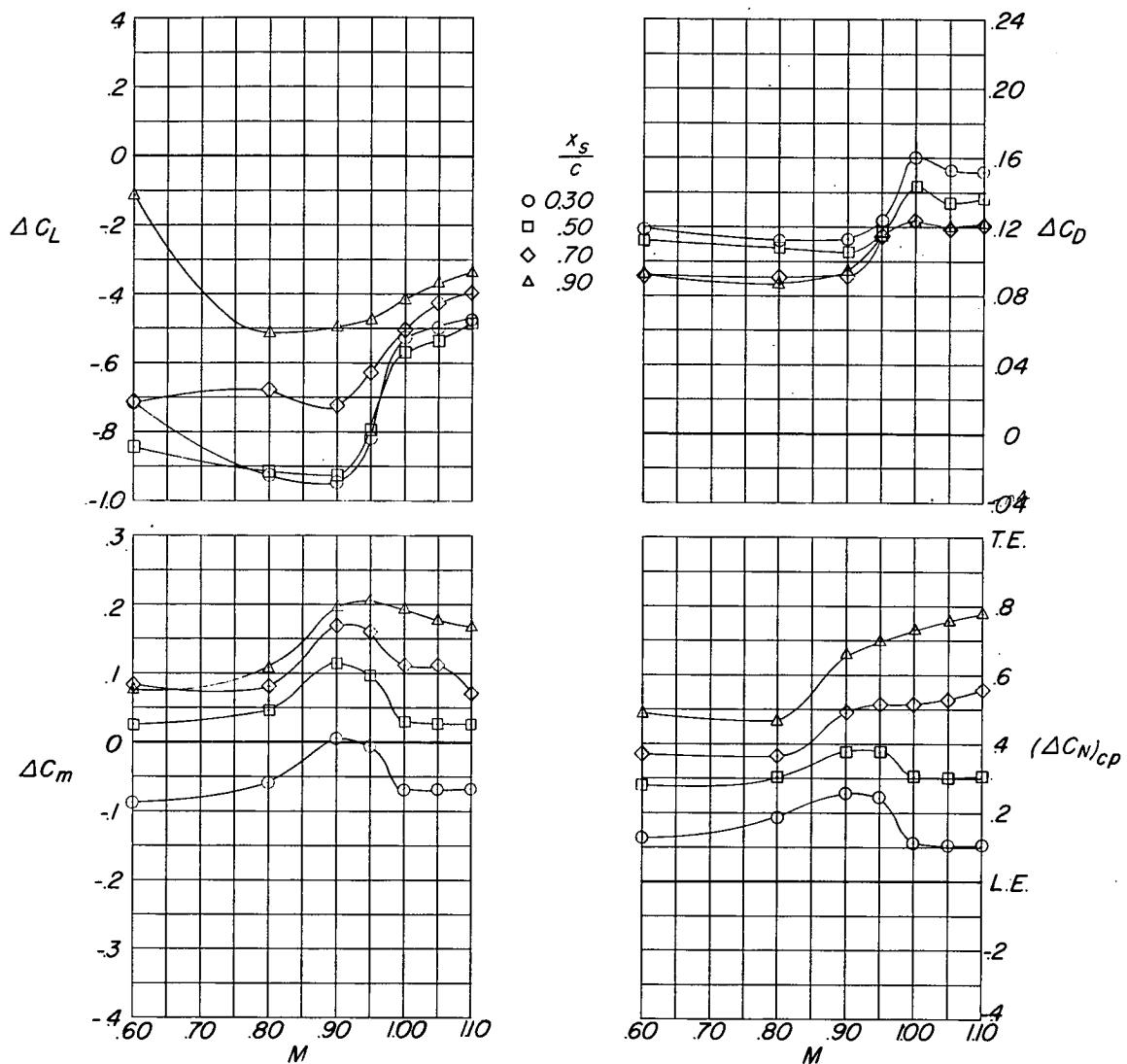
Figure 6.- Continued.

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$$(c) \quad \alpha = 7^\circ; \quad \delta_s = -0.075; \quad \frac{\delta_d}{\delta_s} = 0.75.$$

Figure 6.- Concluded.

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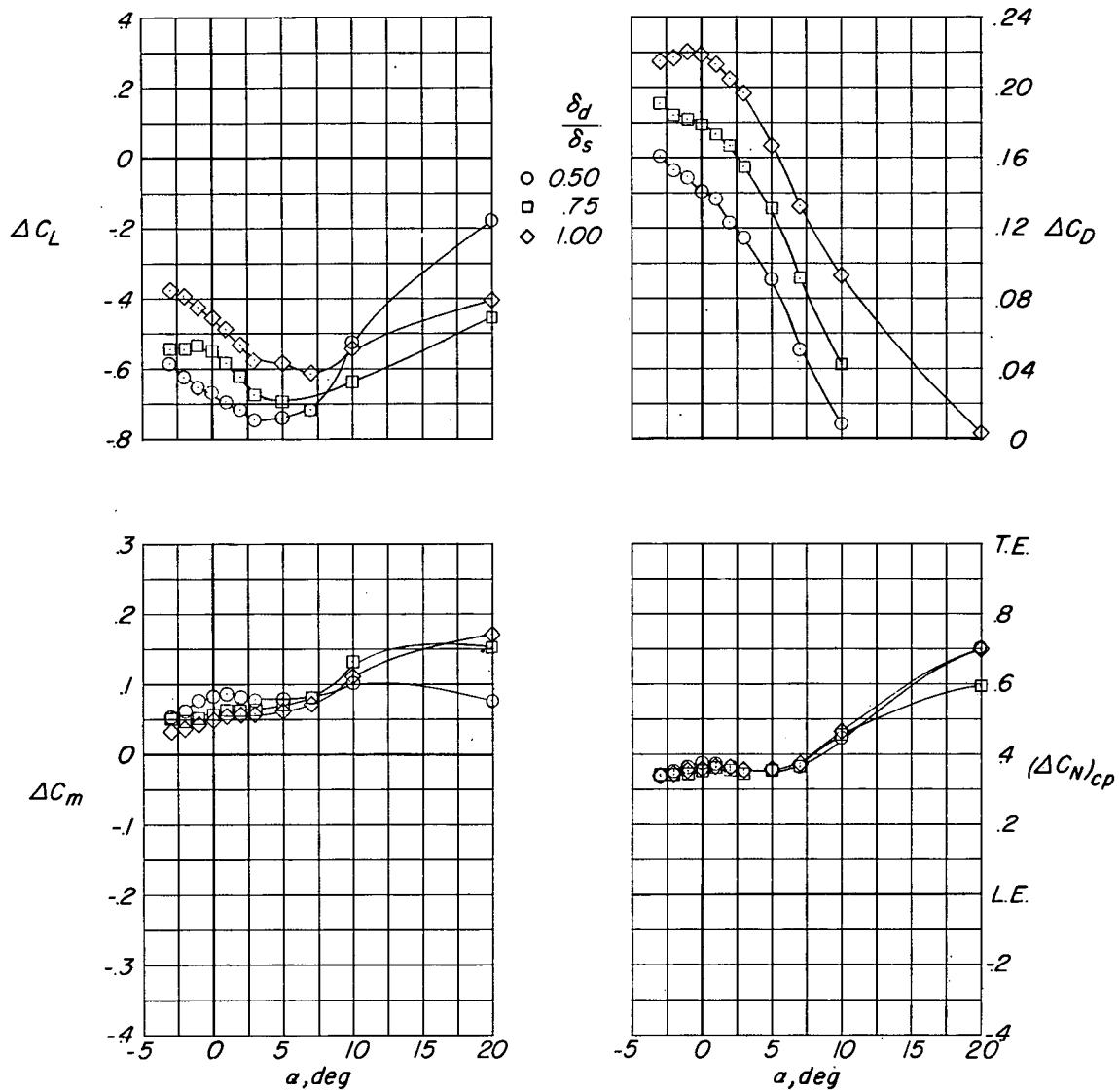
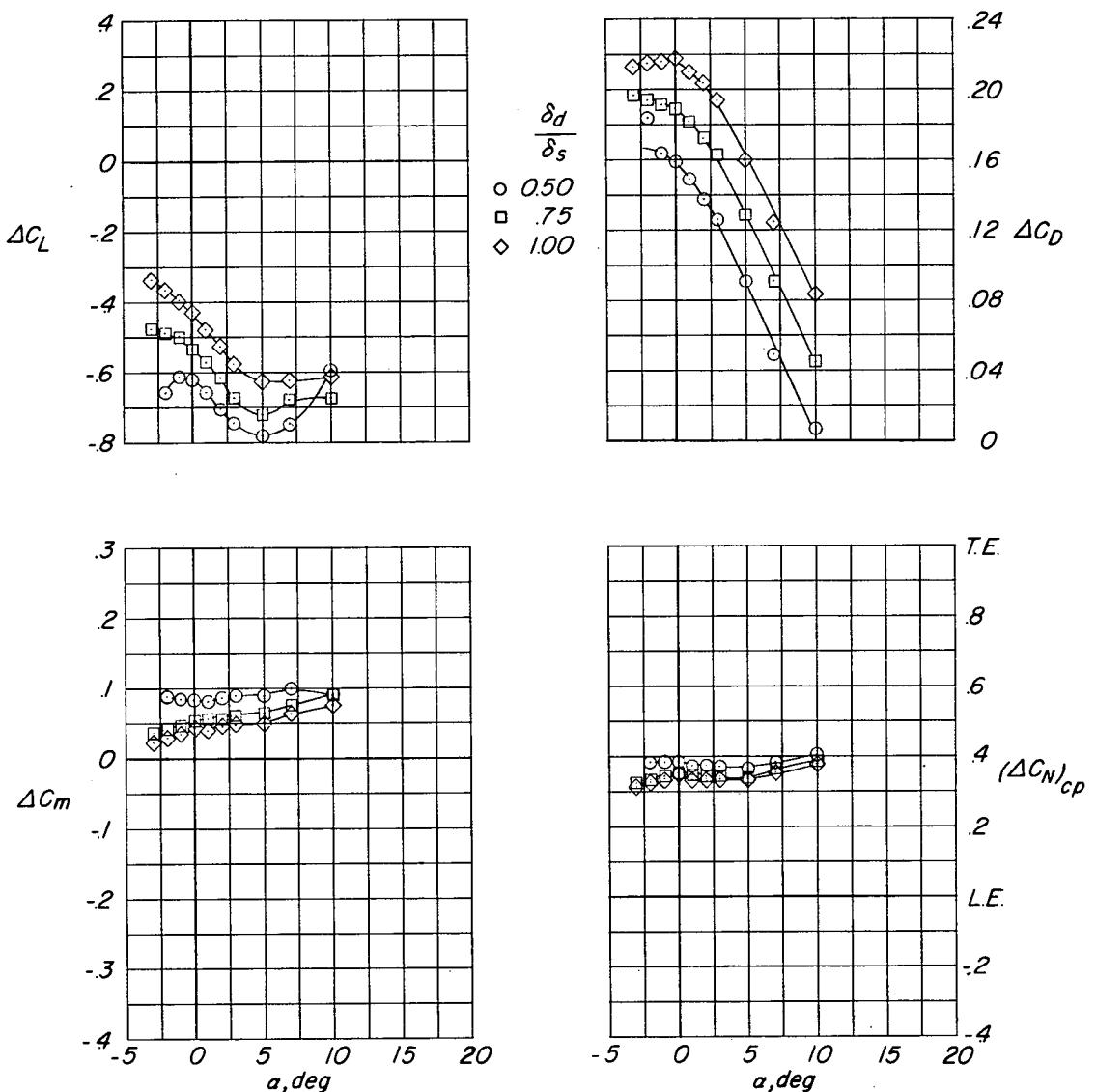
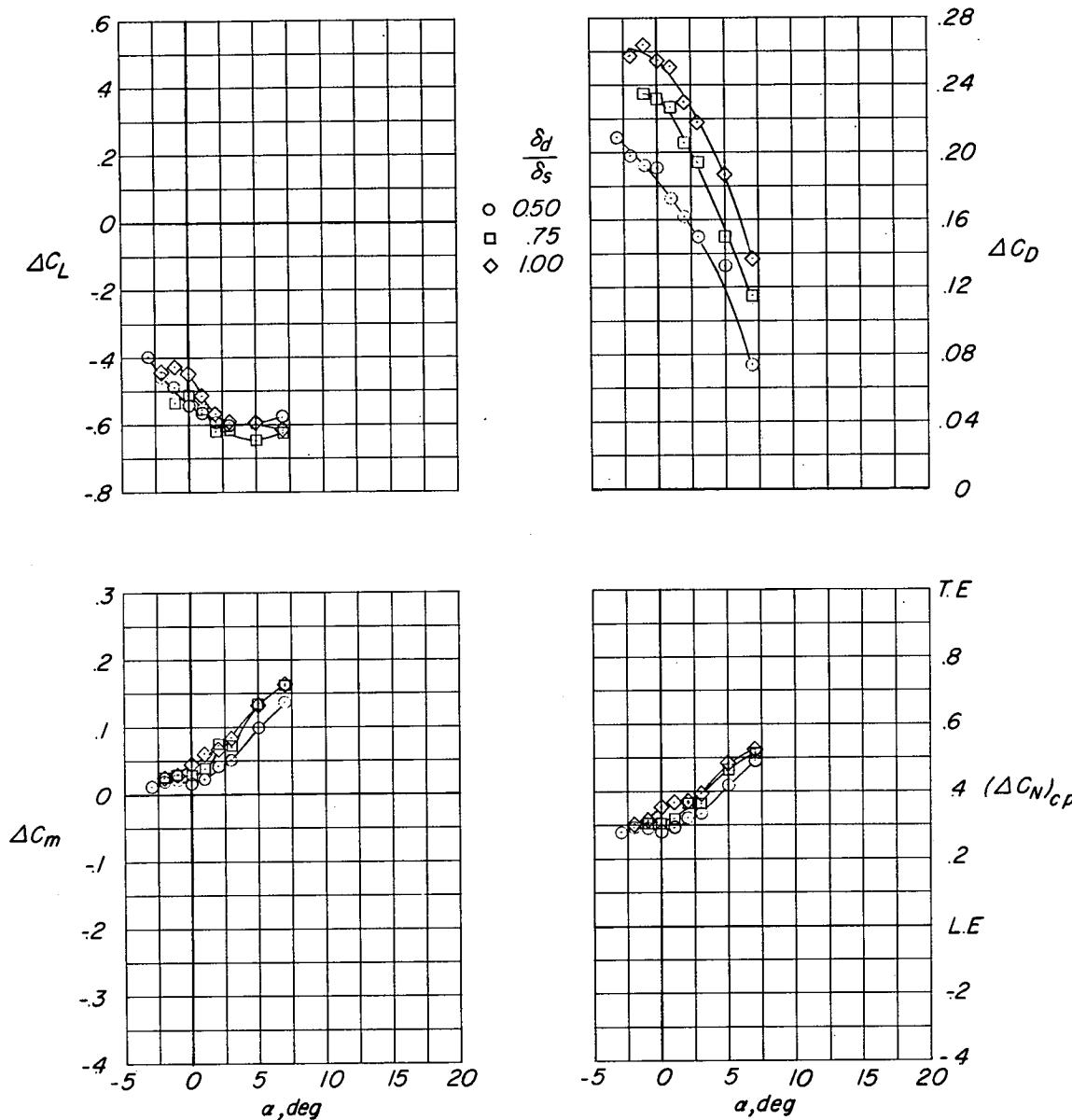
(a) $M = 0.60$; $\delta_s = -0.075$.

Figure 7.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with angle of attack for the aspect-ratio-4 model having the spoiler-slot-deflector configuration at $x_s/c = 0.70$ and various control projection ratios (δ_d/δ_s) .





(c) $M = 0.95$; $\delta_s = -0.075$.

Figure 7.- Continued.

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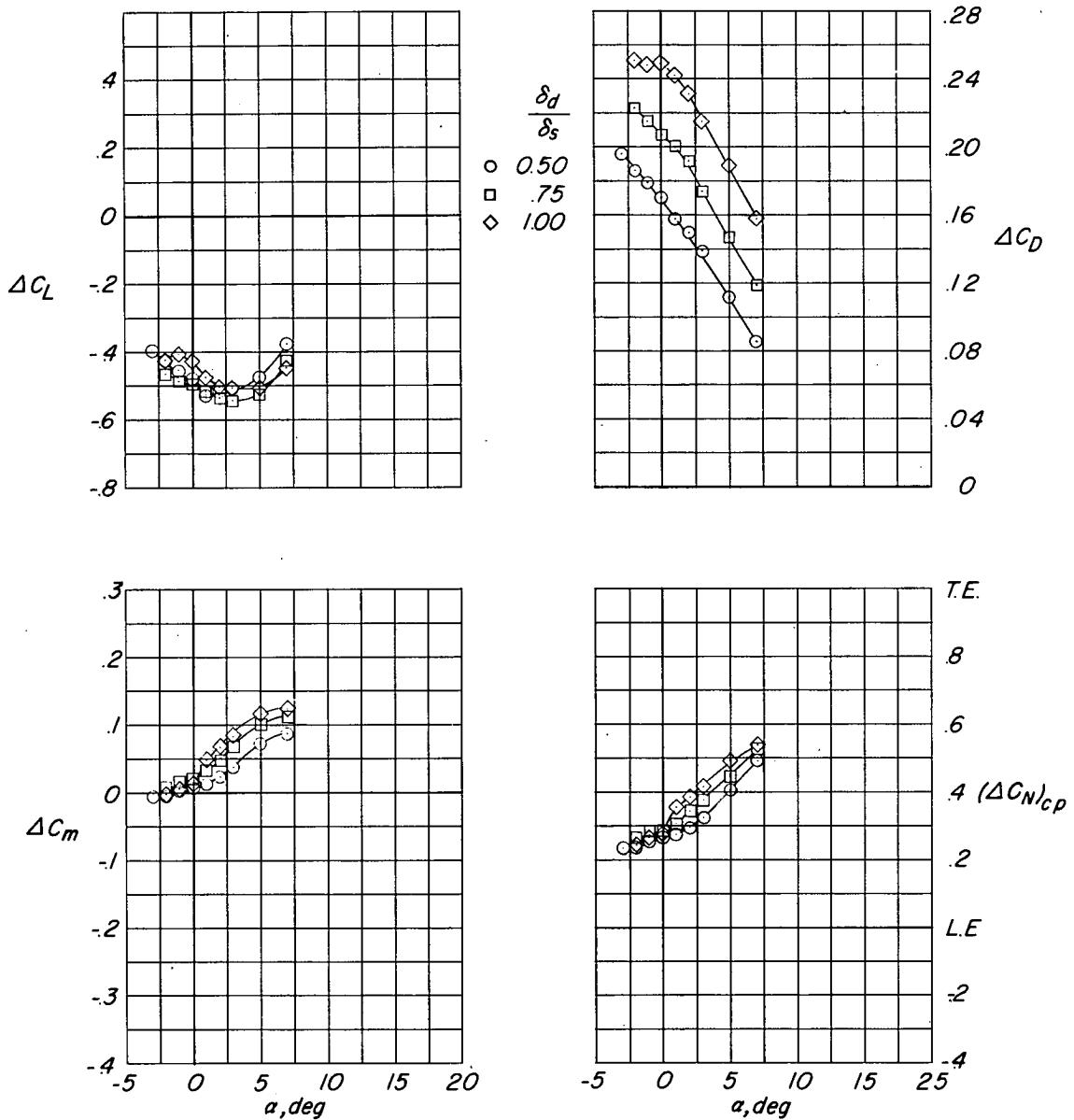
(d) $M = 1.05$; $\delta_s = -0.075$.

Figure 7.- Concluded.

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